CANADA YEAR BOOK
1961

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PREFACE

The 1961 edition of the Canada Year Book continues a series of annual publications giving official statistical and other information on almost every measurable phase of Canada's development. As the economy of the country has expanded, the Dominion Bureau of Statistics has endeavoured to present the story of this development, summarizing a great mass of detailed statistical information concisely within the covers of one volume and supplementing it with data from other Departments of the Federal Government and from the provinces.

Special feature articles are presented in each edition of the Year Book. Those in the current issue include: "The Drainage Basins of Canada" (pp. 16-18); "Amendment of the Canadian Constitution" (pp. 51-57); "Federal Food and Drug Legislation in Canada" (pp. 242-248); "The National Agricultural Program" (pp. 399-402); "Canadian Metallurgical Development" (pp. 513-522); "The Fur Industry" (pp. 618-622); "The Construction Industry in Canada" (pp. 684-689); "Taxation in Canada" (pp. 1038-1050); and "Commercial Banking in Canada" (pp. 1115-1120). Included also is a newly prepared treatise on Geology of Canada; this subject, because of its unchanging character, is not covered in detail in each edition.

All chapters include the latest data available at the time of printing. The most extensive revisions occur in the information on machinery of government, public health and welfare, scientific, medical and industrial research, the primary industries, manufacturing, capital expenditures, transportation, foreign trade and national income. The concluding chapter, entitled "Sources of Official Information and Miscellaneous Data", presents reference material listing government information services, special material published in earlier Year Books, federal legislation of the 1960-61 session of Parliament, a Canadian chronology of events, a register of official appointments, and a statistical summary of the progress of Canada since 1871.

Enclosed in the pocket on the inside back cover of the volume is a detailed political map.

The present volume was produced in the Canada Year Book Section of the Information Services Division by Miss M. Pink, Associate Editor of the Year Book and Chief of the Section, and the Year Book staff under the editorship and direction of Dr. C. C. Lingard, Director of the Division. The charts and maps were prepared for publication by Miss P. Beland of the Canada Year Book Section, L. Tessier of the Drafting Unit, and the Surveys and Mapping Branch of the Department of Mines and Technical Surveys.

The co-operation of numerous officials of the various Departments of the Federal and Provincial Governments and of this Bureau in the preparation of material for the Year Book is gratefully acknowledged. Credit by means of footnotes is given where possible either to the persons or to the branches of the public service concerned.

Walter E. Duffett.

DOMINION STATISTICIAN

DOMINION BUREAU OF STATISTICS,
Ottawa, September 15, 1961.

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WEIGHTS AND MEASURES AND OTHER INTERPRETATIVE DATA

In Canada as a rule the Imperial system of weights and measures is followed. An exception, however, is the ton where, unless otherwise stated, the short ton of 2,000 lb. is meant. Billion where used represents 1,000 million.

The following table shows the weights and measures used in Canada in connection with the principal field crops and for wheat flour and fruits:—

Grains—	*Pounds per Bushel*
Wheat	60
Oats	34
Barley	48
Rye	56
Buckwheat	48
Flaxseed	56
Corn	56
Mixed grains	50
All others	60

Fruits (standard conversions)—	*Pounds*
Apples, per barrel	135
Apples, per box	43
Pears, per bushel	50
Plums " "	50
Cherries " "	50
Peaches " "	50
Grapes " "	50
Pears, per box	42
Strawberries, per quart	1.25
Raspberries " "	1.25
Loganberries " "	1.25

Wheat Flour—

2.3 bu. of wheat is required to produce 100 lb. of flour.

Relative Weights and Measures, Imperial and United States

The following list of coefficients may be used to translate amounts expressed in one unit to the other. It must be borne in mind that where the list below refers to Imperial pint, quart and gallon, their equivalent in ounces is also in Imperial measure; likewise United States designations for these quantities are shown in the U.S. equivalent in ounces. The Imperial (or British) fluid ounce and the U.S. fluid ounce are different measures. One Imperial fluid ounce equals 0.96 United States fluid ounce and one Imperial gallon equals 1.2 United States gallon.

1 Imperial pint=20 fluid ounces.
1 United States pint=16 fluid ounces.
1 Imperial quart=40 fluid ounces.
1 United States quart=32 fluid ounces.
1 Imperial gallon=160 fluid ounces.
1 United States gallon=128 fluid ounces.
1 Imperial proof gallon=1.36 United States proof gallon.
1 short ton=2,000 pounds.
1 long ton=2,240 pounds.
1 barrel crude petroleum=35 Imperial gallons.
1 ounce avoirdupois=0.91146 ounce troy (oz.t.)

Fiscal Years of Federal and Provincial Governments

The fiscal year of the Federal Government and of each of the ten Provincial Governments ends on March 31. Throughout the Year Book, fiscal year figures are indicated in the text and headings of tables; otherwise, figures are for calendar years.

SYMBOLS

The interpretation of the symbols used in the tables throughout this publica is as follows:—

. . figures not available.

... figures not appropriate or not applicable.

— nil or zero.

- - amount too small to be expressed or where "a trace" is meant.

^{p} preliminary figures.

^{r} revised figures.

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The interpretation of the symbols used in the tables throughout the Year Book will be found on the facing page.

PART I.—GEOLOGY OF CANADA*

North America comprises six main natural regions, which are both physiographic and geological because the ages, kinds and structures of the underlying rocks determine the natures of the land surfaces. Knowledge of these regions is important because their geological characteristics have much influence on the suitability of different areas for such activities as agriculture, mining, petroleum production and sports, as well as on the varied scenery of the country. The six regions are: the Canadian Shield, a vast area of ancient rocks that is mainly in Canada; the Interior Plains and Lowlands, the largest area of which extends throughout the mid-Continent from the Gulf of Mexico to the Arctic Ocean; the Appalachian Region, mainly in the United States but also forming an important part of Eastern Canada; the Cordilleran Region, extending along the entire west coast of the Continent; the Atlantic Coastal Plain along the eastern seaboard of the United States; and the Innuitian Region, a mountainous belt in the Arctic Archipelago. Canada includes parts of four of these regions, all of the Innuitian Region, but none of the Atlantic Coastal Plain.

The Canadian Shield, embracing about one-half of the total area of Canada, is a roughly horseshoe or shield shaped terrain of some 1,850,000 sq. miles, having Hudson Bay at its approximate centre. The Shield continues into the United States west and south of Lake Superior, and east of Kingston where a belt of resistant rocks called the Frontenac Axis forms the Thousand Islands and, to the south, broadens to form the Adirondack area.

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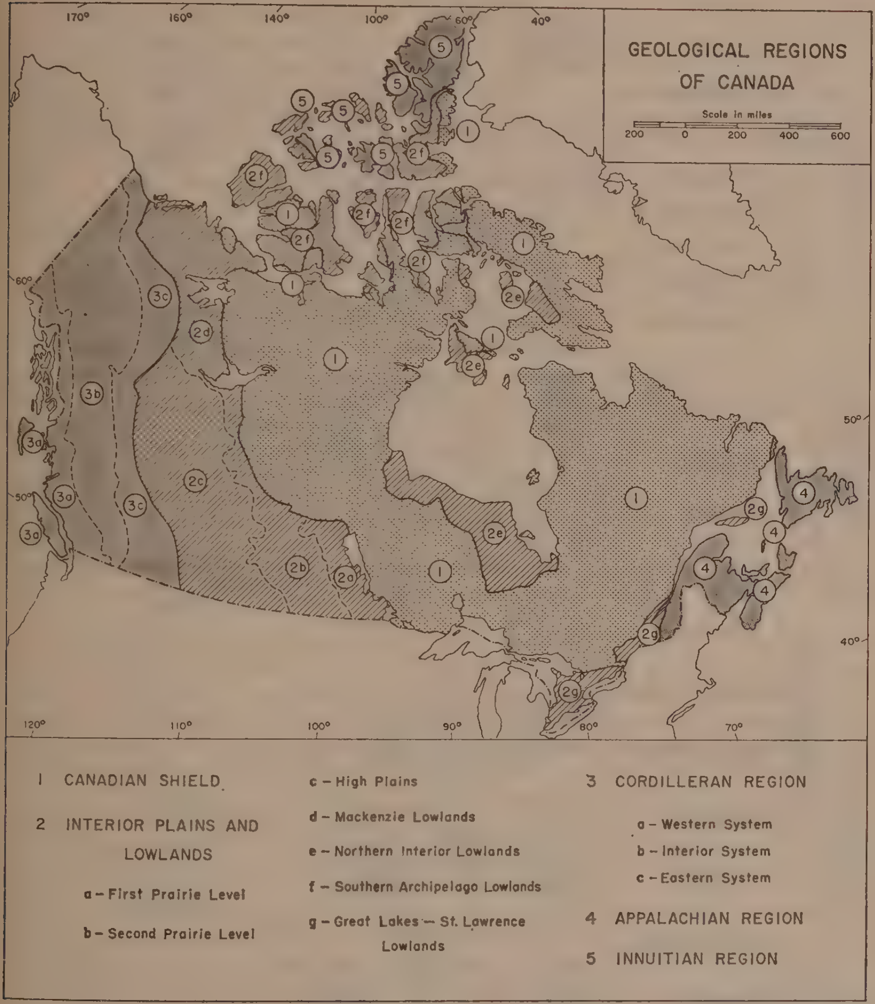
* Prepared by Dr. A. H. Lang and published by permission of the Director, Geological Survey of Canada, Ottawa.

Far back in geological time the Shield contained many ranges of high mountains but these have mainly been worn down to a surface of moderate relief consisting of hills, ridges and valleys containing innumerable lakes and streams. Most of the surface is from 600 to 1,200 feet above sea-level, but higher uplands form such well-known features as the Laurentian Mountains north of Montreal where Mount Tremblant rises to an elevation of 3,150 feet, and the Haliburton Highlands in southeastern Ontario which are up to about 1,800 feet. Along the coast of Labrador and in Baffin Island are mountains rising 5,500 and 8,500 feet, respectively, above the sea.

Flanking the Shield are large expanses of plains and lowlands underlain by relatively young and soft rocks overlain in many places by good agricultural soils. A notable characteristic of the boundary between the Shield and the lowlands is the presence of large lakes that lie partly in rock basins in the Shield and partly in depressions in the younger strata. The most prominent are Great Bear Lake, Great Slave Lake, Lake Athabasca, Lake Winnipeg and Lake Huron. The largest lowland area is that of the Interior Plains, sometimes called the Great Plains or Western Interior Lowlands. These constitute the prairies of Western Canada and their wooded continuation to the north. They are divided into the first prairie level, also called the Central Lowlands or Manitoba Plain, from 600 to 900 feet in elevation; the second prairie level, in western Manitoba and eastern Saskatchewan, averaging 2,000 feet in elevation; the High Plains of Alberta and western Saskatchewan, up to 4,300 feet; and, to the north, the Mackenzie Lowlands, from 500 to 4,000 feet. The Northern Interior Lowlands include the Hudson Bay Lowlands south of Hudson Bay, the Foxe Basin Lowlands in and near western Baffin Island, and the Southern Archipelago Lowlands which occupy large parts of the more southerly Arctic islands. The Arctic Coastal Plain farther to the north is sometimes classed as a separate physiographic region comparable to the Atlantic Coastal Plain but is here grouped with the other plains and lowlands for simplicity. The Great Lakes–St. Lawrence Lowlands form two important agricultural and industrial areas in southern Ontario, separated by the Frontenac Axis; the more easterly continues in Quebec, on both sides of the St. Lawrence River, and an isolated continuation forms Anticosti Island.

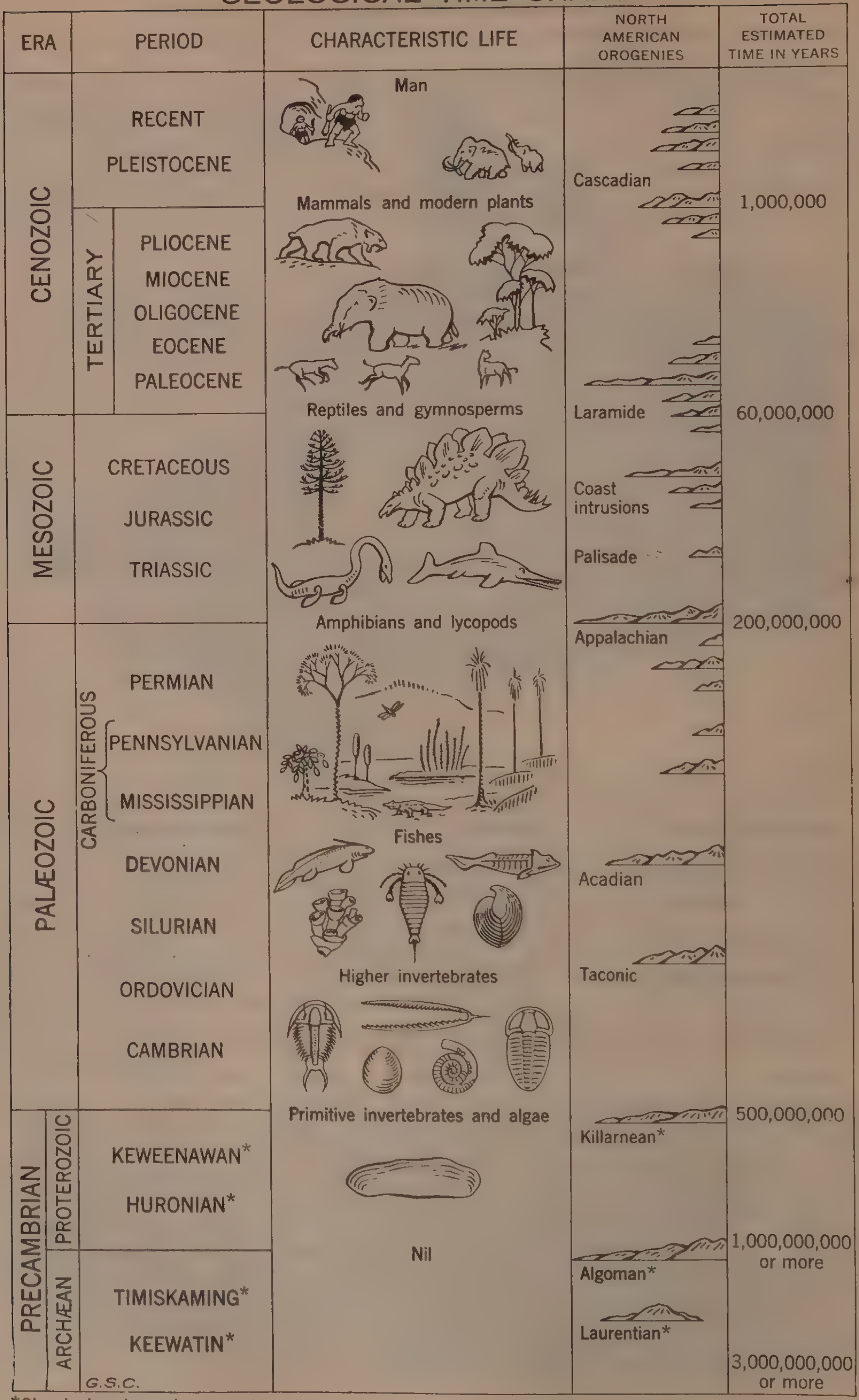
The Canadian Cordilleran Region is a northwesterly-trending belt about 500 miles wide composed of high mountains and lower plateaux and valleys. It comprises southwestern Alberta, all of British Columbia except its northeastern corner, almost all of Yukon Territory, and the southwestern part of the Northwest Territories. The individual mountain groups and plateaux are arranged in a complex pattern divisible into three parallel northeasterly-trending zones; in most places these zones are quite distinct and are called the Western, Interior and Eastern Systems. Because the Western and Interior Systems are distinct geologically from the Eastern System they are grouped as the Western Cordillera in some geological literature, and in that case the Eastern System is called the Eastern Cordillera. The greater part of the Western System is composed of the high, rugged Coast Mountains along the mainland coast of British Columbia, which are up to 13,260 feet in elevation. Along part of the Yukon–Alaska boundary they are flanked to the southwest by the still higher St. Elias Mountains, up to 19,850 feet above the sea. In southern British Columbia a fairly small area is formed by the Cascade Mountains. Separated from the mainland by the Insular Passage are ranges forming Vancouver and Queen Charlotte Islands, with peaks up to 6,968 feet in elevation. The Interior System is a complex group of plateaux and mountains, respectively up to 6,000 and 11,000 feet above sea-level. Its principal plateaux are the Yukon in central Yukon Territory, the Nechako in central British Columbia, and the Fraser farther south. Some authorities separate the southern part of Fraser Plateau as the Kamloops Plateau, which extends to the 49th Parallel near the Okanagan River. The principal mountain divisions of the Interior System are the Ogilvie and Selwyn Mountains in the Yukon, the Cassiar, Omineca, Skeena, and Hazelton Mountains in northern British Columbia, and the Cariboo, Monashee, Selkirk, and Purcell Mountains in the south-central part of the province, east of Fraser and Kamloops Plateaux.


GEOLOGICAL REGIONS OF CANADA
Scale in miles
200 0 200 400 600
170° 160° 140° 100° 60° 40°
60° 50° 40°
120° 110° 100° 90° 80° 70°
1 2a 2b 2c 2d 2e 2f 2g 3a 3b 3c 4 5
1 CANADIAN SHIELD
2 INTERIOR PLAINS AND LOWLANDS
a – First Prairie Level
b – Second Prairie Level
c – High Plains
d – Mackenzie Lowlands
e – Northern Interior Lowlands
f – Southern Archipelago Lowlands
g – Great Lakes – St. Lawrence Lowlands
3 CORDILLERAN REGION
a – Western System
b – Interior System
c – Eastern System
4 APPALACHIAN REGION
5 INNUITIAN REGION

Geographical Branch, Department of Mines and Technical Surveys, 1960

The highest peak, 11,590 feet in elevation, is in the Selkirks. The Eastern System is divided into the Northern Ranges and the Rocky Mountains, separated by a plain and plateau along the Liard River near the British Columbia–Yukon boundary. The main features of the Northern Ranges are the British and Richardson Mountains near the Arctic Coast, and the Mackenzie and Franklin Mountains in the western part of the Northwest Territories. The Mackenzies occupy the largest area and are up to about 9,000 feet in elevation. The Canadian Rockies are composed of high, serrated ranges extending northward from the 49th Parallel; the elevation of the highest peak, Mount Robson, is 12,972 feet. Flanking them on the east are the Rocky Mountain Foothills which form a transition with the Plains. The Rocky Mountains, although extensive, are but a relatively small part of the mountains of Western Canada; therefore the popular tendency to apply the name to the entire Canadian Cordillera is inadmissible.

GEOLOGICAL TIME CHART



ERA		PERIOD	CHARACTERISTIC LIFE	NORTH AMERICAN OROGENIES	TOTAL ESTIMATED TIME IN YEARS
CENOZOIC		RECENT	Man		
		PLEISTOCENE		Cascadian	1,000,000
	TERTIARY	PLIOCENE	Mammals and modern plants		
		MIOCENE			
		OLIGOCENE			
		EOCENE			
		PALEOCENE		Laramide	60,000,000
MESOZOIC		CRETACEOUS	Reptiles and gymnosperms		
		JURASSIC		Coast intrusions	
		TRIASSIC		Palisade	200,000,000
PALÆOZOIC		PERMIAN	Amphibians and lycopods	Appalachian	
	CARBONIFEROUS	PENNSYLVANIAN			
		MISSISSIPPIAN			
		DEVONIAN	Fishes	Acadian	
		SILURIAN			
		ORDOVICIAN	Higher invertebrates	Taconic	
		CAMBRIAN			500,000,000
PRECAMBRIAN	PROTEROZOIC	KEWEENAWAN*	Primitive invertebrates and algae	Killarnean*	
		HURONIAN*			1,000,000,000 or more
	ARCHÆAN	TIMISKAMING*	Nil	Algoman*	
		KEEWATIN*		Laurentian*	3,000,000,000 or more

G.S.C.

*Classical region only

The Canadian Appalachian Region is the northern continuation of a long belt of fairly low mountains and ridges in the eastern United States. In Canada they extend in a general northeasterly direction through the eastern part of the Eastern Townships of Quebec, the Gaspe region, and all of New Brunswick, Nova Scotia and the Island of Newfoundland excepting several lowland areas which, like Prince Edward Island, are classed as part of the Appalachian Region. The Appalachian Mountains have been in existence much longer than those of the Cordilleran Region and have been worn down to moderate proportions. Their highest point in Canada is Mount Jacques Cartier (4,160 feet) in the Shickshock Range of Gaspe. The highest elevations in New Brunswick, Nova Scotia and the Island of Newfoundland are 2,690, 1,392 and 3,500 feet, respectively.

The Innuitian Region, formerly called the Northern Arctic folded belt, is an area of fairly high mountains up to 300 miles wide stretching for about 800 miles across Ellesmere Island, the Parry Islands and other neighbouring islands. The ranges are from 3,000 to 10,000 feet in elevation.

Geological Processes.—The earth's crust is composed of minerals, the solid form in which the elements and their inorganic compounds exist naturally. Minerals occur in the crust in two main ways—as rock-forming minerals and as mineral deposits. Rocks are fairly large and homogeneous bodies composed of mineral grains. These may be of only one mineral, as in pure sandstone or limestone, but more commonly they comprise grains of two or more minerals, thus accounting for the variegated appearance of granite and many other rocks. Mineral deposits are concentrations of one or more minerals occurring within rocks as veins, irregular masses, or in other ways. Such mineral deposits are common but the minerals may not be valuable; they may be valuable but not in sufficient quantity to be mined economically; or, as in relatively few instances, they may be of economic sizes and contents.

Geological phenomena cannot be understood without an appreciation of the vastness of geological time. Pioneer geologists concluded that the earth existed for many millions of years, basing this on such evidence as the amount of sediments deposited annually in bodies of water (for example, it was estimated that several thousand years would be required to deposit one foot of typical limestone) and equating these estimates with the great thicknesses of sedimentary rocks measurable in various places. This was corroborated by observations that particular fossils are characteristic of particular groups of sedimentary rocks and that the plants and animals of which they are the remains must have evolved very slowly. Recently, more satisfactory methods of dating have been developed, based on the radioactive decay of certain elements such as uranium, which disintegrate into 'daughter' elements at constant rates. Such determinations are only beginning to become available in satisfactory quantities because they require much searching for suitable material, careful sampling and involved laboratory analyses. Most of the results date phenomena that affected rocks after they were formed, rather than the time of origin of the rock sampled. The oldest samples tested have yielded ages of 3,000 to 4,000 million years. Long before such methods were available, geologists agreed to divide geological time into eras and periods, most of which were terminated by unusually strong disturbances in the earth's crust. The eras and periods are listed on the accompanying chart, together with the most recent estimates of the dates of termination of the eras. The 'Precambrian' lasted more than five-sixths of entire geological time, but because of virtual absence of fossils in Precambrian rocks it was not possible to divide Precambrian time with the same assurance as later time, although, as explained above, progress is now being made. Therefore only two Precambrian eras, called the Early Precambrian or Archæan and the Late Precambrian or Proterozoic, are usually recognized; these have not been divided into periods that can be applied from one large area to another, whereas the younger eras and periods have world-wide recognition.

Because of atmospheric conditions the rocks at the earth's surface have from early time been subjected to weathering and erosion of the same kinds as can be seen at work today in the disintegration of rock surfaces, in the cutting action of streams, waves and winds carrying sand particles, in the spalling of rocks by frost action, in the gouging action of glaciers, in the levelling effects of landslides, and in the slow solution of soluble rocks like limestone. Continued over millions of years, these agencies reduced even great mountain chains to flat or rolling surfaces. The debris was carried away and deposited in basins by streams, waves and winds as mud, silt, sand or gravel. In some places, such as a continental shelf, the thickness of sediments was relatively small, and in others huge thicknesses accumulated in large trough-like depressions called geosynclines (part of the Caribbean Sea near the Lesser Antilles is a modern example). Also, compounds dissolved in water were deposited chemically in the bottoms of seas and lakes. In time, sediments become solid sedimentary rocks by the compaction caused by overlying sediments and by the cementing of grains by material deposited from solutions. Thus mud, sand and gravel, respectively, become shale, sandstone and conglomerate; and chemical precipitates become limestone, dolomite or beds like salt or gypsum.

In addition to sedimentary varieties there are two other fundamental classes of rocks—igneous and metamorphic. Igneous rocks are commonly formed by the crystallization of molten material, of which lava is a surface manifestation. If crystallization takes place beneath the surface it is slow, resulting in coarsely crystalline rocks such as granite, which may be exposed at the surface long afterwards as a result of erosion. If, on the other hand, the molten material reaches the surface from a volcano it crystallizes quickly to form fine-grained stratified volcanic rocks such as rhyolite and basalt; often associated with lavas are clouds of volcanic ash which settle to form sedimentary rocks called tuffs. Metamorphic rocks are formed from sedimentary or igneous rocks by the action of heat or pressure, or both, which in some cases merely causes a different crystallization of the pre-existing minerals and in others produces new minerals by re-arrangement of the elements already present to form new minerals that are more stable under the changed conditions; the latter are commonly platy minerals like mica. Thus shale may become slate, sandstone may become quartzite, and limestone may become marble. Also common results of metamorphism are foliated or banded rocks like schist and gneiss, which may be formed from various rocks and in which the foliation is commonly caused by the parallel orientation of platy minerals; in some gneisses banding is caused partly by thin parallel injections of granitic material. Metamorphic rocks are commonly formed in the 'core' of a mountainous belt, where heat and pressures are increased. Granites and other coarse-grained igneous rocks are also commonly formed there. Some granites and related rocks appear to have been formed as a final stage of metamorphism and recrystallization, without having been melted.

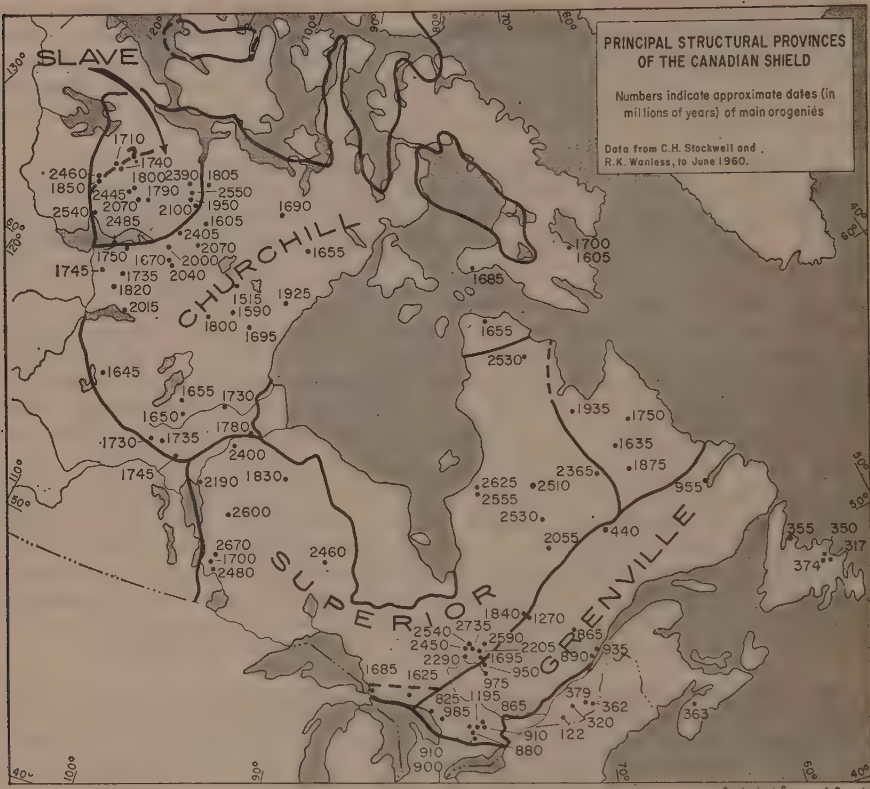
Segments of the crust were elevated from time to time by forces connected with mountain building, earthquakes and volcanic activity. Sometimes segments were uplifted in flat or tilted manner, or in broad, gentle flexures, so that streams and other erosive agencies could again begin their work of degradation, transportation and deposition. Or, particularly where great accumulations of sediments took place in geosynclines, the rocks were cast into arched or crumpled 'folds' such as may be seen on the sides of mountains carved out of sedimentary or volcanic strata. Commonly accompanying such processes were dislocations along fractures, the strata at one side of a fracture no longer matching those at the other; these are called faults, and the vibrations caused by movement along a fault produce earthquakes. Thus the earth's crust is not static, but subject to slow cyclical changes that are continuing at various places today and that culminate from time to time in pronounced disturbances called orogenies. When the highlands formed by an orogeny have been worn down and covered by later rocks a pronounced change in the kinds or structural conditions of the rocks, called an unconformity, is marked by the ancient erosional surface.

Glaciation during the Pleistocene period brought Canadian landscapes virtually to their present forms. In many mountainous regions it has continued since then. Because of fluctuations in the climate, great ice-sheets pushed slowly across almost all Canada, from centres in the Cordillera, Keewatin and Ungava. Rocks frozen in the bases of the ice-sheets and glaciers gouged and smoothed rock surfaces, and vast loads of rocks and rock particles carried by the ice were dumped as gravel or sand, or deposited as silt or clay in large temporary lakes formed by the melted ice. Both the erosive and the depositional actions greatly disorganized the pre-glacial drainage patterns, resulting in the numerous lakes, muskegs and irregular stream patterns of many localities, particularly in the Shield. Glacial deposits obscure bedrocks in most places except in the higher parts of mountains and in certain parts of the Shield where glacial scouring was more pronounced than deposition. Elsewhere outcrops are scattered, generally forming less than 10 p.c. of the surface, or are completely lacking in areas many miles in extent.

The geological processes outlined above accounted in one way or another for the raw materials of Canada's mineral industry, which includes the production of the 'fossil' fuels—coal, petroleum and natural gas. Metals are won from deposits containing metal-bearing minerals. Non-metalliferous products such as asbestos, gypsum, sand, gravel and building stone are derived from deposits of minerals like asbestos, or from beds of sedimentary rock as in the case of gypsum, or from rocks like limestone or granite as in the case of building stone, or from unconsolidated sediments like gravel, sand or clay. Coal is formed by alteration of beds in which leaves and other woody material accumulated between layers of typical sediments. Petroleum and gas resulted mainly from the fats of the innumerable organisms that inhabited the seas of former times, which became trapped in sediments. The fats decomposed slowly to form oil and gas which migrated through pores and fractures in unconsolidated sediments or sedimentary rocks to accumulate in places where geological structures were favourable and where impermeable strata overlay in such a way as to prevent escape of oil or gas. Most metal deposits are found in ancient mountain-built areas where igneous and other processes were once active, and which have been eroded deeply. Some non-metalliferous minerals, such as asbestos, are found under analogous conditions and others occur mainly in relatively undisturbed sedimentary rocks. Coal, oil and gas are found only in accumulations of sedimentary rocks younger than Precambrian because suitable organisms were absent before the Palæozoic era. Coal may be present in much-disturbed or undisturbed areas, but oil and gas are found only in moderately disturbed or undisturbed sedimentary rocks because much disturbance permits their escape.

The Canadian Shield.—The Shield is a complex assemblage of Precambrian rocks that, as a whole, represent at least five-sixths of the long duration of geological time. Most of the rocks have been subjected to more than one and in some cases several periods of orogeny, resulting in intricate structures, intense metamorphism, widespread igneous intrusions, and alteration of much ancient sedimentary rock to granite and related material. Orogenies probably occurred at many more times than suggested by the chart on p. 4, but the records of such early events are fragmentary. These complexities, combined with the absence of fossils, which facilitate the correlation of strata younger than Precambrian, hamper interpretation of the geology of the Shield. Nevertheless, progress has been accomplished and methods developed in Canada have been applied to Precambrian shields of other continents.

Because of the size of the Canadian Shield, attempts have been made to divide it into geological or structural 'provinces'. The latter are based on the general directions of structural trends and on age determinations that supply estimates of the dates of orogenies, metamorphism, or igneous intrusions. Several schemes of this kind have been suggested but final agreement on names and boundaries must await further field studies and additional age determinations. A simplified and tentative classification is illustrated by the map on the following page, which also summarizes age determinations by the Geological Survey of Canada to June 1959. According to this plan the Shield is divided into five provinces which, from northwest to northeast, are called Slave, Churchill, Superior, Grenville, and an unnamed one which in other schemes is called Labrador. Some geologists consider that a separate division called Ungava may lie north of the Superior and east of Hudson Bay, and some add another province called 'Arctic Islands' to include the part of the Shield found at and near Baffin Island. More complicated schemes subdivide the provinces into sub-provinces. The Superior and Grenville provinces contain the classical areas where the first geological investigations in the Shield were undertaken. They are, therefore, described in slightly greater detail than space permits for the other provinces.


SLAVE
CHURCHILL
SUPERIOR
GRENVILLE
1710
1740
2460
1850
1800
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2540
2070
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374
2670
1700
2480
2460
1840
1270
2540
2735
2590
865
2450
2205
890
935
2290
1695
1685
1625
950
975
825
1195
379
362
985
865
320
363
910
122
910
880
900
130°
120°
110°
100°
90°
80°
70°
60°
50°
40°

PRINCIPAL STRUCTURAL PROVINCES OF THE CANADIAN SHIELD

Numbers indicate approximate dates (in millions of years) of main orogenies

Data from C.H. Stockwell and R.K. Wanless, to June 1960.

Geological Survey of Canada

The Superior province is underlain mainly by Archæan rocks. These are chiefly belts of metamorphosed sedimentary rocks and lavas, and intervening areas of granite and gneiss. Most of the belts trend east and west and are the remnants of strata that were intensely folded and faulted. The sedimentary phases consist largely of altered greywacke, an impure sandy rock commonly containing volcanic ash. Most of the lava contains rounded masses called 'pillows', which are characteristic of lavas that flowed under water. Most of the lava has been metamorphosed to greenish rocks to which the name 'greenstone' is often applied. In much of the province a succession of greenstones and some altered sediments, estimated to be up to 25,000 feet thick, appears to be the oldest assemblage exposed and was named the 'Keewatin' group or series by early geologists. In places it is overlain unconformably by a thick succession of sedimentary strata, mainly greywacke and slate, with conglomerate at the base; this was called the 'Timiskaming' group. Granite pebbles in the conglomerate led to the conclusion that a period of orogeny, called the Laurentian, took place at the end of Keewatin time. The Archæan era was ended by pronounced orogeny and granitic intrusion, called the Algoman. Upon the ancient land surface resulting from erosion at the end of the Archæan are found, in places, bodies of moderately folded conglomerate, arkose, quartzite, limestone, lavas and other rocks. In general these are less metamorphosed than Archæan rocks or, in some cases, unmetamorphosed. The largest assemblages of these rocks, extending fairly uninterruptedly from near Sault Ste. Marie to the northern part of Lake Timiskaming, was named the 'Huronian' by pioneer geologists in 1863. Huronian strata are intruded in places by the Killarney granite, believed to have been formed during the orogeny that marked the end of Proterozoic time. In the Port Arthur area a succession of sedimentary rocks with some volcanic flows, called the Animikie, is regarded as having been deposited in the earlier part of late Proterozoic time, and to represent the 'Upper Huronian'. Overlying the Animikie strata at some localities and directly on Archæan rocks at others is a thick succession of shale, sandstone, lava and other rocks called the 'Keweenawan' and regarded as late Proterozoic in age. These are intruded by diabase and other igneous rocks. Thus the classical subdivisions of the Precambrian rocks in the part of the Shield north of the Great Lakes are two Archæan assemblages called Keewatin and Timiskaming, probably disturbed by at least one early orogeny; a pronounced orogeny and erosional interval at the end of Archæan time; an early and disturbed Proterozoic assemblage called the Huronian; and a late Proterozoic one called the Keweenawan. Although these are the names of groups of rocks, they are sometimes also applied as the names of periods. Such periods are much longer than the periods of the Palæozoic and later eras and they cannot be applied with certainty even in all parts of the Superior province, to say nothing of the remainder of the Shield.

Processes associated in various ways with orogenies formed numerous mineral deposits far below the surface then existing. Many of these have since been exposed by the long erosion to which the Shield has been subjected. The Superior province is Canada's leading producer of metals, but it is impossible to be certain whether this is mainly because more metals were actually deposited there or because the region was more accessible for geological studies, prospecting and mining. It includes orebodies of iron at Steep Rock and Michipicoten, uranium at the base of the Huronian succession near Blind River, nickel-copper-gold ores at Sudbury, the now largely exhausted silver veins at Cobalt, the great gold deposits at Timmins, Kirkland Lake and Larder Lake, and the gold, copper and zinc deposits of the Noranda and Chibougamau areas. It also includes Canada's main lithium and molybdenum mines and the only asbestos mine in the Shield. Many of the orebodies are in or close to belts of Keewatin or Timiskaming strata, and several of the largest, as at Sudbury, Cobalt, Noranda and Chibougamau, occur relatively close to the junction of such belts with the boundary between the Superior and Grenville provinces, which is marked in places by a zone of prominent faults. In the northern part of what is classed tentatively as the Superior province on the map, gently folded strata of Proterozoic type underlying the Belcher Islands contain iron deposits that have received considerable attention. A belt of somewhat similar type crossing Ungava Peninsula from Cape Smith to Wakeham Bay contains occurrences of iron, copper, nickel, gold, zinc and lead.

The western part of the 'Labrador' area contains strata of early Proterozoic type in a belt called the Labrador Trough; the name implies that the belt was a basin of sedimentation in Precambrian time, not that it is now trough-like. It is about 600 miles long and up to 60 miles wide, extending southeasterly from Ungava Bay. Its south end is transitional into the Grenville province where more metamorphosed equivalents of the strata in the Trough, including important iron deposits, have been found. The Trough contains abundant 'iron formation' resembling that of the iron ranges in the Lake Superior region of the United States; the iron formation has been enriched in places to form the large iron deposits now being mined. East of the Trough are more intensely metamorphosed equivalents of strata in the Trough, and other rocks. North of Goose Bay, strata of early Proterozoic type form the Seal Lake belt in which numerous occurrences of copper and uranium have been found.

The Churchill province contains many northeasterly-trending belts of strata of Archæan and early Proterozoic types, with large intervening areas of granites and gneisses and large patches of strata of late Proterozoic type. Prominent among the northeasterly-trending belts is one north of Lake Athabasca which contains both strata of Archæan type called the Tazin group and of Proterozoic type called the Athabasca series; both types contain many uranium occurrences, some of which provide the ores for the important mines of the Beaverlodge area. This belt continues in a general way to Rankin Inlet on Hudson Bay; the eastern part is not known to contain many uranium occurrences but several deposits of gold and a few of copper, nickel and platinum have been found, including the deposit mined for those metals at Rankin Inlet. Belts of strata of Archæan type contain important copper-zinc deposits near Flin Flon, copper-nickel and nickel deposits near Lynn Lake and Thompson, and gold deposits at several locations.

In the northern part of the Slave province a series of altered sedimentary and volcanic strata of late Proterozoic type contains copper deposits which have attracted attention but which have not been developed. More deformed and altered rocks of early Proterozoic type east of Great Bear Lake contained the Eldorado uranium-radium orebodies that have been recently exhausted. North of Great Slave Lake northeasterly-trending bodies of greywacke, slate, and volcanic rocks called the Yellowknife group contain important gold ores. North and south of the East Arm of Great Slave Lake and in its islands, occurrences of various metals have been found and a few of gold and tungsten have been mined.

A large part of the Shield, extending from Georgian Bay to the Strait of Belle Isle, has long been recognized as forming a distinct segment called the 'Grenville'. It was named after the Grenville series, characterized by crystalline limestone, impure limy strata, and large areas of sedimentary gneisses in various stages of alteration to granite. The eastern part of the province contains large igneous intrusions of anorthosite. The age relations between Grenville strata and those of the neighbouring Superior province are puzzling. Recent work has indicated that near Sudbury, as well as at the south end of the Labrador Trough, beds can be traced across the boundary into more metamorphosed rocks of Grenville type. It is believed, therefore, that the distinctive features of the Grenville may be related more to the time and degree of metamorphism than to distinctions in the original age of deposition of strata. The Grenville province contains an unusually large variety of mineral occurrences but has not been as important a producer as the Superior. Several fairly large deposits are mined, including those of nepheline syenite near Peterborough, uranium near Bancroft, iron of the magnetite variety at Bristol and Marmora, zinc and lead in the Ottawa valley and at Tetreault west of Quebec City, and iron and titanium near Havre St. Pierre. Large iron deposits are being prepared for production at the south end of the Labrador Trough.

The Plains and Lowlands.—Sedimentary strata of Palæozoic and younger ages overlap the Shield to form the principal Plains and Lowlands. These strata once covered much more of the Shield before being removed by erosion. The Shield continues under the Plains, as is proved by numerous wells drilled for oil or gas in the Great Plains and in southern Ontario having been bottomed in typical Shield rocks, but it is customary to regard the Canadian Shield Region as the part that is exposed or covered by glacial deposits. The overlying strata are undisturbed or gently tilted or flexed, the Shield and the Plains and Lowlands together forming a central continental region that has been relatively stable since Precambrian time, while orogenies were active in the flanking geosynclinal belts now indicated by the Appalachian, Cordilleran and Innuitian mountains.

The Shield slopes at a rate of 15 feet per mile under the Great Plains, in the western part of which the overlying strata reach a thickness of 10,000 feet. The older overlying beds have been bevelled by erosion along the border of the Shield, exposing in central Manitoba sea-deposited beds of limestone, sandstone and shale of Ordovician, Silurian and Devonian ages. Farther north the exposed Palæozoic strata are mainly Devonian. The Palæozoic formations are overlain by early Mesozoic strata of marine origin and these by both marine and freshwater Cretaceous formations which are the uppermost strata in much of Saskatchewan and Alberta. In places, however, as at Turtle Mountain in Manitoba and the Cypress Hills in Saskatchewan, these are overlain by remnants of early Tertiary formations.

The rich soils of the Great Plains, particularly in the Manitoba Plain, were derived from the weathering of the underlying strata and the unconsolidated deposits resulting from glaciation. Most of Canada's oil and gas is produced from Palæozoic and Mesozoic strata underlying the Great Plains, mainly in Alberta but also in Saskatchewan, Manitoba, northeastern British Columbia and at Norman Wells in the Northwest Territories. The productive beds range from Devonian to Cretaceous in age, the reservoir rocks being largely reefs containing many openings, although 'stratigraphic' traps such as lenses of porous sediments in non-porous ones are also important. Exploration for oil and gas has recently been extended through most of the plains including those in the Arctic Archipelago. The Athabasca oil sands, extending for more than 100 miles along the Athabasca River in northern Alberta, are accumulations of heavy oil and sand of Lower Cretaceous age; the total amount of oil is estimated at 100,000 to 300,000 million barrels, more than all other known reserves of the world. Coal is being or has been produced from many places in the Great Plains. They also yield potash, salt, gypsum, limestone and other non-metalliferous products. The only important known metalliferous deposits are of zinc and lead, in Devonian limestone at Great Slave Lake.

The Arctic Lowlands and Plateaux form most of the southern part of the Arctic Archipelago, lying between the Innuitian Region and the exposed part of the Shield. They are underlain mainly by Ordovician and Silurian limestone, dolomite and shaly dolomite, but strata of Cambrian, Devonian and Tertiary ages are also present. Some of the beds contain coal. Active interest is now being shown in the oil and gas possibilities of the strata.

West and east of the Frontenac Axis, the Great Lakes and St. Lawrence Lowlands are underlain by gently dipping beds of limestone, dolomite, sandstone, and shale of Cambrian, Ordovician, Silurian, Devonian and Mississippian ages. West of the Axis they have a total thickness of 5,877 feet but few places are underlain by all formations; the greatest thickness penetrated by drilling is 4,727 feet. East of the Axis, formations in Quebec have a total thickness of at least 10,000 feet. Ordovician and Silurian strata are exposed on Anticosti Island. The first petroleum field in Canada was in the area north of Lake Erie, which is still producing natural gas and some oil. Most oil was derived from Devonian strata and most gas from Silurian. Important amounts of salt and building materials are produced from the St. Lawrence Lowlands but only a few metalliferous occurrences have been found other than the Marmora iron deposit which is in Precambrian rocks that were overlapped by a thin covering of Palæozoic strata and so are technically within the Lowlands.

Exceptions to the flat character of the St. Lawrence Lowlands are the Monteregian Hills at and near Montreal. These are the remnants of small alkaline igneous intrusions of Devonian or younger age, which are more resistant to erosion than the surrounding strata.

An area extending for about 800 miles between Churchill and the south end of James Bay is underlain by Ordovician, Silurian and Devonian strata composed largely of limestone and dolomite and by a smaller amount of Jurassic or Cretaceous strata. The thickness of this assemblage of sedimentary rocks is not well known because outcrops are scarce and little drilling has been done. Large deposits of gypsum have been found in the Devonian succession and substantial lignite deposits occur in Mesozoic beds.

The Cordilleran Region.—The Cordillera are on the site of a great geosyncline where sediments were laid down at least as early as late Precambrian time, where marine sedimentation continued in places as late as the Upper Cretaceous, and where freshwater sediments were deposited locally during the Tertiary.

In parts of the interior of British Columbia and the Yukon are exposed highly metamorphosed rocks bearing some resemblance to the Archæan of the Shield. All available evidence indicates, however, that these are partly late Precambrian and partly younger strata that were metamorphosed in pre-Permian and, probably, partly in Precambrian time.

The oldest strata whose age is clear are beds of quartzite, argillite, dolomite and other sedimentary rocks totalling many thousands of feet, principally in the Cariboo, Purcell, Selkirk and Rocky Mountains. In places, these unfossiliferous beds are overlain by others containing Lower Cambrian fossils. In general, the Cambrian rests unconformably on the rocks beneath but in many places there is no marked unconformity. It is concluded, therefore, that at least some of the Precambrian strata may be younger than any strata classed as Proterozoic in the Shield and may have been deposited during the time when the Shield was being eroded before Palæozoic sediments were deposited on it.

In the western part of the region the principal Palæozoic strata exposed are volcanic and sedimentary strata, largely limestone, of Carboniferous and Permian ages. More extensive are great accumulations of volcanic and sedimentary strata of Triassic, Jurassic and Lower Cretaceous ages. In the Eastern Cordillera the Palæozoic periods are better represented, as limestone, dolomite, quartzite, shale and other rocks of Ordovician, Silurian, Devonian, Carboniferous and Permian ages are present. These are overlain in places by shale, sandstone, limestone and other rocks ranging in age from Triassic to Upper Cretaceous. The combined thickness of strata of different ages exposed in various parts of the Rocky Mountains, including the Precambrian beds mentioned earlier, is estimated at 68,000 feet. In many parts of the Rocky Mountains, particularly along the eastern border, low-angle faults thrust Precambrian and Palæozoic strata above younger beds.

As already indicated, some evidence now largely obliterated by later events points to early orogenic activities. The principal mountain-building and igneous processes of which good evidences remain began locally in early Mesozoic time, culminated in the Western Cordillera in the Nevadan orogeny in late Jurassic and early Cretaceous time, but was not significant in the Eastern Cordillera until the Laramide orogeny early in the Tertiary. Thus the Western Cordillera were formed much earlier than the Eastern, were largely worn down by erosion by the time the Rockies and other eastern mountains were built, and the western part of the region was uplifted at the time of the Laramide orogeny so that renewed erosion could carve the surface into the present mountains and plateaux. Therefore if one stands on a peak in, say, the Coast or the Selkirk Mountains he is impressed by the uniformity of summit levels representing the ancient, uplifted surface.

The strata in the Western Cordillera are intruded by many bodies of igneous rocks, from small to very large in size. Most are granodiorite or diorite, but many others are granite, gabbro, or other related types; still others are ultrabasic, i.e., composed mainly of iron and magnesium minerals. Most are related to the Nevadan orogeny but some must have been intruded in late Cretaceous or early Tertiary time, and there is incomplete evidence that some are of ages from late Precambrian to Triassic. The intrusions are scattered widely, the largest concentration being the Coast Instrusions which form the greater part of the Coast Mountains. In a general way, this belt of intrusion swings easterly in southern British Columbia and is represented by many large and small bodies in the Kamloops Plateau and the Monashee, Selkirk and Purcell Mountains. Intrusive rocks are rarely exposed in the Eastern Cordillera, probably because the mountains there have not been eroded sufficiently to reveal many.

In the Interior belt much lava was deposited on the plateaux at various times during the Tertiary, mainly in or about Miocene time. The lavas are chiefly of the basaltic variety, and apparently issued from long fissures rather than from volcanoes. Sandstone, shale and volcanic ash were deposited in local freshwater basins in the same belt.

Mountain-building in the western part of the United States formed the Cascade and Coast Ranges there during late Tertiary or early Pleistocene times. These movements, which took place over considerable time and were accompanied by much volcanic activity, are sometimes called the Cascadian orogeny. In the Canadian Cordillera this orogeny was mainly limited to uplifts and some volcanic deposition. Some volcanic activity occurred locally as late as the post-Pleistocene, as evidenced by lava and ash resting on glaciated rocks and glacial debris and by a well-preserved cinder cone in northern British Columbia.

Glaciation was widespread in the Cordillera during the Pleistocene and glaciers persist today in many places, chiefly in the St. Elias and Coast Mountains and the Columbia Ice Field in the Rockies. A large area in Yukon Territory, however, escaped glaciation because the high St. Elias Mountains barred the moisture-laden winds from the Pacific to such an extent that ice did not form in much of the interior, despite the increased coldness of the times. This lack of glaciation was largely responsible for the preservation and discovery of the Klondike gold placers and for other characteristics of mineral deposits in the area.

The Cordilleran region was Canada's leading producer of minerals until mining in the Shield took the lead about the turn of the century. Notwithstanding greatly increased production in British Columbia, the Cordilleran region now produces only some 7 p.c. of the Canadian total because of the greatly expanded production of metals from the Shield and the value of oil and gas from the Great Plains. Metal mining in the Cordillera is and has been almost entirely in the Western Cordillera, but important quantities of coal and structural materials are obtained from the Eastern Cordillera, and much oil was produced from the Foothills in Alberta, chiefly at Turner Valley.

Broadly speaking, all parts of the Western Cordillera except those covered by Tertiary lavas or sediments are favourable for the occurrence of metals. Numerous occurrences of many kinds have been found, most having been formed directly or indirectly as a result of the Nevadan orogeny, although some mineralization attended the early Tertiary disturbances and some may have taken place before the Nevadan. British Columbia contains many large and moderate sized mines of lead, copper, zinc, gold, silver and iron, mainly along the flanks of the belt of Coast Intrusions and in the southern part of the province, where the Sullivan mine is the largest lead-zinc-silver operation in Canada and one of the largest in the world. British Columbia also contains rich mercury and tungsten mines that are now inactive because of reduced demands for these metals, and an asbestos deposit of exceptional quality which is now being mined. Barite, gypsum and structural materials are produced and extensive coalfields are available although the production of coal has declined. Yukon Territory also contains diversified mineral deposits, but mining at present is limited to rich silver-lead-zinc veins at Mayo, the waning placers of the Klondike, and coal extracted for local use.

The Appalachian Region.—This region is the northern continuation of a long belt of folded strata extending along the eastern side of the United States. It is on the site of a geosyncline that existed mainly in Palæozoic time in which great thicknesses of sedimentary and volcanic strata were laid down. The northwestern boundary of the region is a long curving fault or zone of faults which extends from Lake Champlain at least as far as the Gulf of St. Lawrence and which causes the curved shape of the northern coast of Gaspe. The strata in the Appalachians have been folded and faulted by successive periods of orogeny along axes that strike northeasterly; thus strata of different kinds and ages and belts of intrusive rocks form northeasterly-trending bands, many of which are responsible for the peninsulas, bays and ridges of the region. Three principal periods of orogeny, called the Taconic, the Acadian and the Appalachian, have been recognized. The Taconic occurred at the close of the Ordovician, the Acadian during the Devonian, and the Appalachian at the close of the Palæozoic. In Canada the Taconic disturbances were fairly widespread, the Acadian were more so, affecting areas that were previously affected by the Taconic and areas that were not, but the Appalachian orogeny, which was a major feature in parts of the United States, was of minor and local importance.

Precambrian rocks of Grenville types exposed in parts of western Newfoundland probably represent an extension of the Shield but are separated from it by younger strata along the Strait of Belle Isle. Less deformed strata, including quartzite, slate and other rocks in eastern Newfoundland and in parts of Nova Scotia and New Brunswick, bear a general resemblance to Proterozoic strata of the Shield. They are overlain unconformably by Palæozoic strata deposited intermittently from Cambrian to Pennsylvanian times. In much of the region, deposition apparently took place in local basins, strata of the same ages varying widely in kind and in their contained fossils. The rocks are largely limestone, shale, sandstone and volcanic rocks, some of the formations being of great thickness. For example, the greatest thickness of Middle Silurian beds in North America—8,427 feet of sedimentary and 4,626 feet of volcanic strata—is exposed near Chaleur Bay. Near the Bay of Fundy, Triassic sandstone with interbedded volcanic strata similar to those of the Hudson River Palisade in New York represent the youngest rocks of the Appalachian Region.

Numerous bodies of granite and related igneous rocks intrude the strata. Most of these were associated with the Acadian orogeny and were intruded in Lower, Middle and Upper Devonian times. Many bodies of ultrabasic rocks occur intermittently in northeasterly-trending belts in the Eastern Townships and in Newfoundland. Most of these intrude Cambrian and Ordovician strata and are probably related to the Taconic orogeny.

The Appalachian Region now produces about 7 p.c. of the Canadian production of minerals, including fuels. This is mainly asbestos associated with basic rocks in the Eastern Townships, iron from Ordovician sedimentary beds at Bell Island, Newfoundland, and coal from Pennsylvanian strata in Nova Scotia. The Eastern Townships contain the world's leading asbestos occurrences. Elsewhere copper, zinc, lead, gold and silver are produced, mainly from central Gaspe and central Newfoundland. Most of the deposits are related to the Acadian orogeny, as were numerous gold-bearing veins formerly mined in Nova Scotia. Gypsum, barite and salt are produced from Mississippian strata in Nova Scotia, and some gypsum is also produced in New Brunswick. From veins in granite and related rock in Newfoundland comes most of Canada's production of fluorite.

The Innuitian Region.—This mountainous belt is known mainly from reconnaissance surveys. It is underlain by moderately-to-intensely folded sedimentary, volcanic and metamorphic rocks of various ages, the oldest being probably Proterozoic and the youngest being Tertiary. Folding occurred at different times and in different directions, some before the Silurian period, some in Silurian or Devonian time, some late in the Palæozoic era, and some in Tertiary time. Five fold-belts have been recognized—Cornwallis, Parry Islands, Central Ellesmere, Northern Ellesmere, and Eureka Sound. Granitic intrusions have been found in the Northern Ellesmere belt. Lead and zinc have been reported from Little Cornwallis Island and magnetite from Axel Heiberg Island. Gypsum occurs in beds of various Palæozoic ages. Coal has been found at several places, in strata of different ages, the thickest known seams being in beds apparently of Tertiary age on Ellesmere and Axel Heiberg Islands. The less deformed parts of the region offer possibilities for oil and gas and are now being investigated by companies.

The foregoing are only brief sketches of the subjects covered. Further information is supplied by *Geology and Economic Minerals of Canada* ($2, including Map 1045A) and *Prospecting in Canada*; the latter also contains chapters on the principles of geology and on minerals and rocks. The *Geological Map of Canada* (1045A, 50 cents) and *Canada, Principal Mining Areas* (900A) are also recommended. Map 900A is revised annually; one copy is sent free to residents of Canada and additional copies are 25 cents each. These publications can be ordered from the Director, Geological Survey of Canada,* together with lists of reports and maps of the Geological Survey of Canada on specific topics and areas, for each province. Other publications are available from provincial mines departments.

PART II.—GEOGRAPHY†

Canada occupies the northern half of the North American Continent with the exception of Alaska and Greenland, extending in longitude from Cape Spear, Newfoundland, at 52° 37′ W, to Mount St. Elias, Yukon Territory, at 141° W, a distance of 88° 23′. In latitude it stretches from Middle Island in Lake Erie, at 41° 41′ N, to the North Pole. The northernmost point of land is Cape Columbia on Ellesmere Island, at 83° 07′ N. Canada is thus a western and a northern country, a fact of increasing strategic significance.

In shape, Canada resembles a distorted parallelogram with its four corners making important salients. In the north the salient formed by the Arctic Archipelago, which penetrates deep into the Arctic basin, guards the northern approaches to the Continent from Europe and Asia and makes Canada neighbour to the Union of Soviet Socialist

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* A special article covering the history and current activities of the Geological Survey of Canada appears in the 1960 Canada Year Book, pp. 13-19, and is available from the Director in reprint form. A brief outline of the functions of the Survey is given in the Mines and Minerals Chapter of this volume (see Index).

† Revised or prepared by the Geographical Branch, Department of Mines and Technical Surveys, Ottawa.

Republics. In the south the salient of peninsular Ontario thrusts far into the heart of the United States. In the east the salient of Labrador and the Island of Newfoundland commands the shortest crossings of the North Atlantic Ocean and links Canada geographically with the United Kingdom and France. In the west the broad arc of land between Vancouver in southern British Columbia and Whitehorse in Yukon Territory provides the shortest crossings of the North Pacific Ocean between continental North America and the Far East. Canada thus lies at the crossroads of contact with the principal powers and some of the most populous areas of the world.

In size, Canada is the largest country in the Western Hemisphere and the second largest country in the world. Its area of 3,851,809 sq. miles may be compared with that of the Union of Soviet Socialist Republics, 8,649,821 sq. miles,* the United States of America (including Alaska and Hawaii), 3,615,213 sq. miles,* and Brazil, 3,287,204 sq. miles.* It is more than forty times the size of the United Kingdom and eighteen times that of France. The immense size of the country, while encompassing many resources and seeming to afford much scope for settlement, imposes its own burdens and limitations, particularly because much of the land is mountainous and rocky or is under an Arctic climate. The developed portion is probably not more than one-third of the total; the occupied farm land is less than 8 p.c. and the currently accessible productive forested land 19 p.c. of the total. The population of Canada, estimated at 17,814,000 on June 1, 1960, may be compared with 177,700,000† for the United States (including Alaska and Hawaii) (1959) and with 64,216,000† for Brazil (1959).

1.—Approximate Land and Freshwater Areas, by Province or Territory

NOTE.—A classification of land areas as agricultural, forested, etc., is given at p. 27.

Province or Territory	Land	Freshwater	Total	Percentage of Total Area
	sq. miles	sq. miles	sq. miles	
Newfoundland	143,045	13,140	156,185	4.1
Island of Newfoundland	*41,164*	*2,195*	*43,359*	*1.1*
Labrador	*101,881*	*10,945*	*112,826*	*3.0*
Prince Edward Island	2,184	—	2,184	0.1
Nova Scotia	20,402	1,023	21,425	0.6
New Brunswick	27,835	519	28,354	0.7
Quebec	523,860	71,000	594,860	15.4
Ontario	344,092	68,490	412,582	10.7
Manitoba	211,775	39,225	251,000	6.5
Saskatchewan	220,182	31,518	251,700	6.5
Alberta	248,800	6,485	255,285	6.6
British Columbia	359,279	6,976	366,255	9.5
Yukon Territory	205,346	1,730	207,076	5.4
Northwest Territories	1,253,438	51,465	1,304,903	33.9
Franklin	*541,753*	*7,500*	*549,253*	*14.3*
Keewatin	*218,460*	*9,700*	*228,160*	*5.9*
Mackenzie	*493,225*	*34,265*	*527,490*	*13.7*
Canada	**3,560,238**	**291,571**	**3,851,809**	**100.0**

Section 1.—Physical Geography

Subsection 1.—Physiographic Regions

Since structure tends to dominate relief to a remarkable degree even though its effects have been modified by glacial and river erosion or deposition, the main physiographic regions of the country coincide with the geological regions, which are described in this edition in Part I on Geology. For a description of the physical structure of the country in its relation to climatic phenomena, reference should be made to a special article on The Climate of Canada appearing in the 1959 Year Book at pp. 23-51.

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* *United Nations Statistical Yearbook, 1959.*

† *United Nations Population and Vital Statistics Report, Oct. 1, 1960.*

Subsection 2.—Inland Waters

Drainage Basins.—The inland waters of Canada (not including saltwater areas that are a part of Canada) are extensive, constituting about 7.6 p.c. of the total area of the country. They are best studied by segregating the main drainage basins, described in detail in the following special article.

THE DRAINAGE BASINS OF CANADA

The rivers of Canada drain four great basins—the Hudson Bay, the Arctic, the Atlantic and the Pacific, mentioned in order of size. The northern basins are the largest, 75 p.c. of Canada's land area being drained by northerly-flowing rivers.

The rivers have played an important role in the development of the country. In the early days of exploration they provided access to the interior and were the highways of travel and commerce as new areas opened up. Today, with the exception of the mighty St. Lawrence whose function as a transport facility has been greatly enhanced by the construction of the new Seaway, the rivers of Canada carry little commerce but the drainage basins have taken on a new importance as the bases of vast developed and potential water power resources. Locally, particularly in some drier areas of the Prairie Provinces, they are the bases of important irrigation projects.

Hudson Bay Drainage Basin

The Hudson Bay drainage basin is the largest in area and is the least important economically. Many of the rivers have been used locally for transportation, especially in earlier days by fur traders and explorers, but only the Nelson and Churchill Rivers, which have water power potential within economical distance of settled areas, are of any great significance. Island Falls on the Churchill and Grand Rapids on the Nelson are the sites of hydro-electric developments.

Several tributaries of the Nelson River are of importance to the economy of the Prairie Provinces, particularly the Saskatchewan River with its two main branches—the North Saskatchewan and the South Saskatchewan—which drain one of Canada's great agricultural regions. In the early days they were the pathways to settlement but recently their importance has settled around a number of major irrigation projects, bringing new life to a dry region.

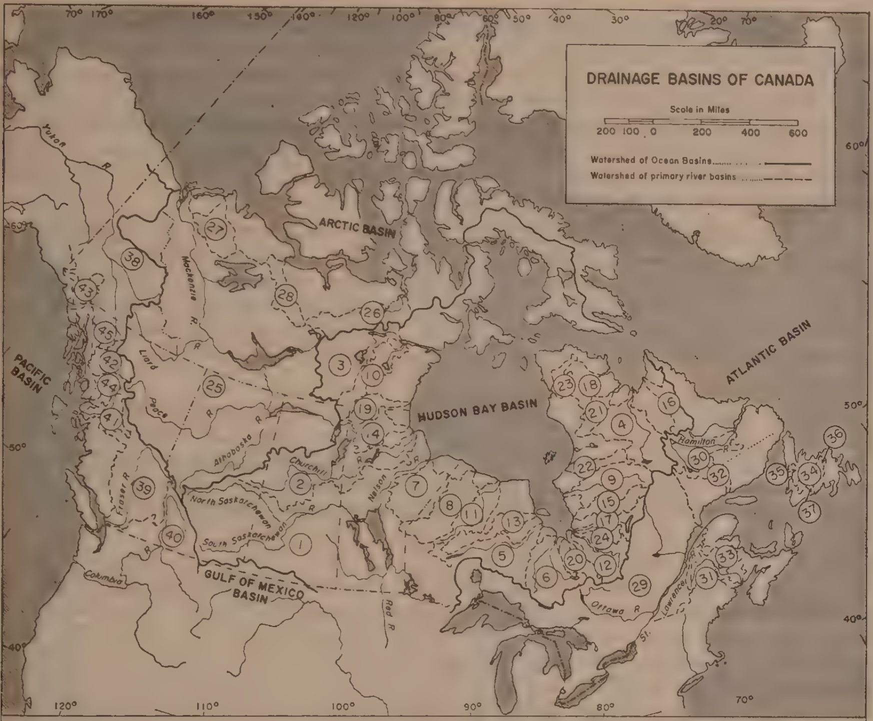
Arctic Drainage Basin

The Arctic drainage basin is dominated by the Mackenzie, one of the world's longest rivers, which flows 2,635 miles from the head of the Finlay River to the Arctic Ocean. Although only the part of the river north from Great Slave Lake bears the name, the Mackenzie drainage basin is the largest river basin in Canada and drains an area in the three most westerly provinces of approximately 700,000 sq. miles. The Mackenzie includes among its many important tributaries such great rivers as the Peace and the Athabasca. Much of the river has been used as a highway by fur-trade canoes since the eighteenth century. Except for a 16-mile portage in Alberta, it is possible for steamboats to navigate from the end of steel at Waterways on the Athabasca River to the mouth of the Mackenzie, a distance of 1,700 miles. The navigation season begins about mid-June and ends in mid-October.

Atlantic Drainage Basin

The Atlantic drainage basin is the most important in Canada. It is dominated by the St. Lawrence–Great Lakes system, which covers an area of approximately 678,000 sq. miles and drains the industrial heart and thus the most densely populated region of the country.

The St. Lawrence is one of the great rivers of the world; the estimated flow volume of more than 400,000 cu. feet per second at its mouth is exceeded only by the Mississippi on the North American Continent. It became an important highway of transportation soon after its discovery by Jacques Cartier in 1535 and as the Canadian West opened up the St.


DRAINAGE BASINS OF CANADA
Scale in Miles
200 100 0 200 400 600
Watershed of Ocean Basins
Watershed of primary river basins
ARCTIC BASIN
HUDSON BAY BASIN
ATLANTIC BASIN
PACIFIC BASIN
GULF OF MEXICO BASIN
Yukon R.
Mackenzie R.
Liard
Peace R.
Athabaska R.
Churchill
Nelson
North Saskatchewan R.
South Saskatchewan
Fraser R.
Columbia
Red R.
Ottawa R.
St. Lawrence
Hamilton
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45
120° 110° 100° 90° 80° 70°
40° 50° 60°

BASINS AND RIVERS	AREA DRAINED
	Sq Miles
Hudson Bay Basin	1,421,350
1. Nelson	344,550
2. Churchill	109,100
3. Thelon (Thelon–Dubawnt)	82,700
4. Koksoak	55,800
5. Albany	45,400
6. Moose	42,700
7. Hayes	41,200
8. Severn	39,300
9. Fort George	36,700
10. Kazan	27,600
11. Winisk	26,000
12. Nottaway	25,400
13. Attawapiskat	19,400
14. Seal	18,800
15. Eastmain	18,300
16. George	16,400
17. Rupert	16,300
18. Payne	14,700
19. Thlewiaza	14,700
20. Harricanaw	13,900
21. Leaf	12,900
22. Great Whale	12,000
23. Povungnituk	9,900
24. Broadback	8,600
Arctic Basin	1,380,895
25. Mackenzie	696,700
26. Back	35,300
27. Anderson	23,800
28. Coppermine	15,600
Atlantic Basin (exclusive of Hudson Bay)	580,097
29. St. Lawrence	306,900
30. Hamilton	30,800
31. St. John	14,400
32. Romaine	5,800
33. Miramichi	4,900
34. Exploits	4,600
35. Humber	2,800
36. Gander	2,000
37. Little (Grey)	1,000
Pacific Basin	400,730
38. Yukon	127,190
39. Fraser	84,100
40. Columbia	39,600
41. Skeena	21,200
42. Stikine	19,600
43. Aisek	10,100
44. Nass	8,000
45. Taku	6,200

Geographical Branch, Department of Mines and Technical Surveys, 1960

Lawrence assumed the role of an avenue of trade with Europe. The water route has been under almost continual improvement, which has consisted of two phases—the dredging of the natural channel between Quebec and Montreal, and the making and re-making of channels around the many rapids in the river between Montreal and the Great Lakes. The work was climaxed in 1959 with the opening of the St. Lawrence Deep Waterway, a joint Canada–United States project permitting ocean-going vessels to enter the Great Lakes. The Waterway, providing cheap transportation for bulk commodities such as grain and iron ore to and from the very heart of the Continent, is expected to have considerable impact on the economy of the two countries.

The five Great Lakes, fed by the vast drainage basin, act as a mighty reservoir for the flow of the St. Lawrence River and provide a constant source of power for large hydro-electric developments.

The St. Lawrence has many tributaries of importance, the most notable being the Ottawa River, which itself has more than twenty major tributaries. These rivers were the early highways into the interior and along them in a later period moved the great timber trade. The largest tributary to the St. Lawrence below the Ottawa River is the St. Maurice, which serves both as a source of electric power and as a transport route for millions of logs destined for the large pulp and paper mills downstream. Eastward, the Saguenay River, although short, is also the source of great power development and, below Chicoutimi, is a picturesque fiord-like canal navigable by large ships.

The entire drainage area to the north of the St. Lawrence and the Great Lakes is occupied by the southern fringe of the Canadian Shield—a forested, rugged, rocky plateau region from which tributary rivers tumble over the edge of the Shield. These rivers are ideally suited to the development of electric power and for many generations have been used for transporting logs to mills downstream. The spring log runs, coinciding with the high water from melting snows, culminate winter activity in the forests for many thousands of loggers.

Several other rivers in the Atlantic drainage basin are important locally. The St. John is the principal river of New Brunswick. It flows through a fertile agricultural district and is the source of most of the province's hydro-electric power. The Hamilton River, the largest in Labrador, flows through areas containing good timber and important mineral deposits and offers the possibility of very great power development.

Pacific Drainage Basin

The Pacific drainage basin is the smallest in area of the oceanic drainage basins and contains three major rivers—the Fraser, the Columbia and the Yukon. The rivers of the Pacific basin rise in the mountains of the Cordilleran Region and flow to the Pacific Ocean over tortuous, precipitous courses, rushing through steep canyons and tumbling over innumerable falls and rapids They provide power for great hydro-electric developments and during spawning season swarm with salmon returning inland to their spawning grounds.

The Fraser River, the chief river of British Columbia, rises in the Rocky Mountains in the neighbourhood of Yellowhead Pass. Its total length is 850 miles and it has several large tributaries including the North Thompson and South Thompson Rivers. The lower Fraser valley, including the delta islands, is a rich agricultural area.

The Columbia River is, with the exception of the Yukon, the largest river on the Pacific slope of North America. It is an international river, only 459 of its 1,150-mile length being in Canada. Its great volume, coupled with a total fall of 2,650 feet during its course, gives it an enormous power potential. Recently, Canada and the United States signed agreements for the joint development of the Columbia River, a project equalling in magnitude the St. Lawrence Seaway project but having the objectives of power development, flood control and irrigation rather than primarily of transportation and then power.

The Yukon River, like the Columbia, is an international river; 714 of its 1,979 miles are in British Columbia. Although the fifth largest river in North America and the largest on the Pacific slope, the Yukon is relatively unimportant economically. The river system is navigable for river steamers, without interruption by large rapids, from Whitehorse, Y.T., to its mouth, a distance of 1,777 miles, about 510 of which are in Canada. Power development has been modest, affected by considerable differences in seasonal flow and low market potential for power in the area.

Rivers and Lakes.—Table 2 lists the principal rivers of Canada and their tributaries. The tributaries and sub-tributaries are indicated by indention of names; thus the Ottawa and other rivers are shown as tributary to the St. Lawrence, and the Gatineau and other rivers as tributary to the Ottawa.

2.—Lengths of Principal Rivers and Their Tributaries

Drainage Basin and River	Length
	miles
Flowing into the Atlantic Ocean	
St. Lawrence (to head of St. Louis, Minn.)	1,900
Ottawa	696
Gatineau	240
du Lièvre	205
Coulonge	135
Madawaska	130
Rouge	115
Mississippi	105
Petawawa	95
South Nation	90
Dumoine	80
North	70
North Nation	60
Saguenay (to head of Peribonca)	475
Peribonca	280
Mistassini	185
Ashuapmuchuan	165
St. Maurice	325
Mattawin	100
Manicouagan (to head of Racine de Bouleau)	310
Outardes	270
Bersimis	240
Richelieu	210
St. Francis	165
Chaudière	120
Via the Great Lakes—	
French (to head of Sturgeon)	180
Sturgeon	110
Grand	165
Thames	163
Spanish	153
Trent	150
Mississagi	140
Nipigon (to head of Ombabika)	130
Moira	60
Thessalon	40
St. John	418
Romaine	270
Natashquan	241
Moisie	210
Hamilton	208
Exploits	153
Naskaupi	152
Canairiktok	139
Eagle	138
Miramichi	135
Marguerite	130
Gander	102
Flowing into Hudson Bay	
Nelson (to head of Bow)	1,600
Saskatchewan (to head of Bow)	1,205
South Saskatchewan	865
Red Deer	385
Bow	315
Belly	180
North Saskatchewan	760
Red (to head of Sheyenne)	545
Assiniboine	590
Souris	450
Qu'Appelle	270
Winnipeg (to head of Firesteel)	475
English	330
Churchill	1,000
Beaver	305
Koksoak (to head of Kaniapiskau)	660
Kaniapiskau	575
Severn (to head of Black Birch)	610
Albany (to head of Cat)	610
Dubawnt	580
Eastmain	510
Fort George (to Nichicum Lake)	480
Flowing into Hudson Bay—concluded	
Attawapiskat	465
Kazan	455
Nottaway (to head of Waswanipi)	400
Waswanipi	190
Nelson (to head of Lake Winnipeg)	400
Rupert	380
Red (to head of Lake Traverse)	355
George (to Hubbard Lake)	345
Moose (to head of Mattagami)	340
Abitibi	340
Mattagami	275
Missinabi	265
Hayes	300
Winisk	295
Whale	270
Harricanaw	250
Great Whale	230
Leaf	165
Flowing into the Pacific Ocean	
Yukon (mouth to head of Nisutlin)	1,979
Yukon (Int. Boundary to head of Nisutlin)	714
Porcupine	590
Lewes	338
Pelly	330
Stewart	320
Macmillan	200
White	185
Columbia (total)	1,150
Columbia (in Canada)	459
Kootenay (total)	407
Kootenay (in Canada)	276
Fraser	850
Thompson (to head of North Thompson)	304
North Thompson	210
South Thompson (to head of Shuswap)	206
Nechako	287
Stuart (to head of Driftwood)	258
Chilcotin	146
West Road (Blackwater)	141
Skeena	360
Bulkley (to head of Maxam Creek)	160
Stikine	335
Alsek	260
Nass	236
Flowing into the Arctic Ocean	
Mackenzie (to head of Finlay)	2,635
Peace (to head of Finlay)	1,195
Finlay	250
Smoky	245
Little Smoky	185
Parsnip	145
Athabasca	765
Pembina	210
Liard	755
South Nahanni	350
Petitot	295
Fort Nelson	260
Hay	530
Peel (to head of Ogilvie)	425
Arctic Red	310
Slave	258
Twitya	200
Back	605
Coppermine	525
Anderson	430
Horton	275

The outstanding lakes of Canada are the Great Lakes, although only parts of these are in Canadian territory. The International Boundary between Canada and the United States passes through Lakes Superior, Huron, St. Clair, Erie and Ontario. Details are given in Table 3.

3.—Elevations, Areas and Depths of the Great Lakes

Lake	Elevation Above Sea Level	Length	Breadth	Maximum Depth	Total Area	Area on Canadian Side of Boundary
	ft.	miles	miles	ft.	sq. miles	sq. miles
Superior	602.23	383	160	1,302	31,820	11,200
Michigan (U.S.A.)	580.77	321	118	923	22,400	—
Huron	580.77	247	101	750	23,010	13,675
St. Clair	575.30	26	24	23	460	270
Erie	572.40	241	57	210	9,940	5,094
Ontario	245.88	193	53	774	7,540	3,727

There are no tides in the Great Lakes although considerable variation in water levels is occasioned by strong winds.

Other large lakes of Canada, ranging in area from 9,000 to 12,000 sq. miles, are Lake Winnipeg, Great Slave Lake and Great Bear Lake. Apart from these, notable for size, are innumerable lakes scattered over that major portion of Canada lying within the Canadian Shield. In an area of 6,094 sq. miles, accurately mapped, south and east of Lake Winnipeg, there are 3,000 lakes. In an area of 5,294 sq. miles, accurately mapped, southwest of Reindeer Lake in Saskatchewan, there are 7,500 lakes.

4.—Elevations and Areas of Principal Lakes, by Province

Note.—Areas given are for mean water levels. For those reservoirs and lakes for which two elevations are given, HW means high water and LW low water.

Province and Lake	Elevation	Area
	ft.	sq. miles
Newfoundland—		
Deer	12	24
Gander	86	49
Grand	270	205
Melville	sea level	1,133
Michikamau	1,650	566
Red Indian	500	70
Victoria	700	15
Nova Scotia—		
Bras d'Or	tidal	360
New Brunswick—		
Grand	tidal	65
Quebec—		
Abitibi (total, 350) part	868	55
Albanel	1,289	172
Baskatong (reservoir)	HW 732 LW 677	109
Bienville	1,400	392
Burnt (Brûlé)	1,590	56
Cabonga (reservoir)	HW 1,185 LW 1,169	66
Champlain (total, 360) part	95	18
Chibougamau	1,253	88
Clearwater	790	535
d'Iberville	790	260
Evans	760	180
Goëland	810	125
Indian House	890	125
Kaniapiskau	1,850	210
Kempt	1,372	75
Kipawa	884	125
Lower Seal	860	130
Manicouagan	645	110
Manuan	1,340	100
Maricourt	..	110
Quebec—concluded		
Mattagami	765	88
Minto	450	485
Mistassini	1,220	840
Nichikun	1,737	150
Olga	785	50
Payne	430	230
Pipmakan	HW 1,305 LW 1,275	90
Pletipi	1,660	138
Quinze, des	HW 867 LW 857	55
St. Francis, River St. Lawrence (total, 83) part	154	63
St. John	321	414
St. Louis	69	57
St. Pierre (Peter)	11	142
Simard	859	73
Timiskaming (total, 121) part	HW 589 LW 575	55
Two Mountains	73	63
Waswanipi	830	75
Ontario—		
Abitibi (total, 369) part	868	295
Dog	1,380	61
Eagle	1,192	140
Erie (total, 9,889) part	572	4,912
Huron, including Georgian Bay (total, 23,860) part	580	15,353
Kesagami	..	90
La Croix (total, 55) part	1,186	25
Long	1,025	75
Manitou, Kenora	1,215	60
Mille Lacs, Lac des	1,496	103
Minnitaki	1,177	72
Nipigon	852	1,870
Nipissing	644	350

4.—Elevations and Areas of Principal Lakes, by Province—continued

Province and Lake	Elevation	Area
	ft.	sq. miles
Ontario—concluded		
Ontario (total, 7,313) part	245	3,849
Rainy (total, 360) part (reservoir).	HW 1,108 LW 1,103	291
Red	1,157	71
St. Clair (total, 432) part	574	270
St. Francis, River St. Lawrence (total, 83) part	154	25
St. Joseph	1,218	187
Sandy	906	270
Seul (reservoir)	1,170	539
Simcoe	718	283
Stout (Berens River)	1,039	50
Sturgeon (English River)	1,342	110
Superior (total, 32,483) part	602	11,200
Timagami	965	91
Timiskaming (total, 121) part	HW 589 LW 575	55
Trout (English River)	1,294	156
Trout (Severn River)	770	264
Woods, Lake of the (total, 1,695) part (reservoir)	1,060	953
Manitoba—		
Athapapuskow	956	104
Atikameg	855	112
Beaverhill	651	70
Cedar	830	517
Cormorant	840	174
Cross (Nelson River)	679	274
Dauphin	853	200
Dog	815	64
Etawney	..	28
Gods	585	319
Goose	922	53
Granville	850	181
Island	744	550
Kamuchawie (total, 57) part	1,156	30
Kipahigan (total, 60) part	966	29
Kiskitto	697	65
Kiskittogisu	710	99
Kississing	920	138
Manitoba	812	1,817
Molson	..	154
Moose	838	525
Namew (total, 80) part	872	8
Northern Indian	760	150
Nueltin (total, 850) part	920	76
Oxford	612	155
Paint	615	54
Pelican (west of Lake Winnipegosis)	837	80
Playgreen	712	257
Red Deer (west of Lake Winnipegosis)	862	100
Reed	911	78
Reindeer (total, 2,467) part	1,150	386
St. Martin	798	125
Setting	737	49
Sipiwesk	598	201
Sisipuk (total, 103) part	919	73
Southern Indian	835	1,060
Stevenson	..	75
Swan	849	118
Talbot	845	72
Todatara (total, 241) part	..	156
Walker	679	62
Waterhen	829	90
Wekusko	840	64
Winnipeg	713	9,465
Winnipegosis	833	2,103
Woods, Lake of the (total, 1,695) part (reservoir)	1,060	69
Saskatchewan—		
Amisk	964	168
Athabasca (total, 3,120) part	699	2,165
Besnard	1,278	72
Province or Territory and Lake	**Elevation**	**Area**
	ft.	sq. miles
Saskatchewan—concluded		
Black Birch	1,517	54
Candle	1,621	56
Canoe	1,415	78
Churchill	1,382	213
Cold (total, 138) part	1,756	46
Cree	1,570	446
Cumberland	871	98
Deschambault	1,072	209
Doré	1,506	248
Île à la Crosse	1,380	166
Kamuchawie (total, 56) part	1,156	26
Kipahigan (total, 60) part	966	30
La Plonge	1,476	90
La Ronge	1,198	552
Last Mountain	1,606	89
Methy Lake (Loche, La)	1,460	76
Montreal	1,608	162
Namew (total, 80) part	872	70
Nemeiben	1,259	63
Peter Pond	1,382	302
Primrose (total, 188) part	1,964	173
Quill	1,703	236
Reindeer (total, 2,467) part	1,150	2,058
Riou	..	75
Sisipuk (total, 103) part	919	26
Smoothstone	1,573	110
Snake	1,260	159
Tazin	1,130	156
Wollaston	1,300	796
Alberta—		
Athabasca (total, 3,120) part	699	893
Beaverhill	2,202	80
Buffalo	2,566	56
Calling	1,949	55
Claire	695	545
Cold (total, 138) part	1,756	92
La Biche	1,784	94
Lesser Slave	1,892	461
Mamawi	695	64
Peerless	2,269	75
Primrose (total, 188) part	1,964	8
Sullivan (variable)	2,651	62
Utikuma	2,115	85
British Columbia—		
Adams	1,334	52
Atlin (total, 299) part	2,192	307
Babine	2,332	194
Chilko	3,860	75
Eutsuk	2,817	96
François	2,345	91
Harrison	35	87
Kootenay	1,745	168
Kotcho	1,970	31
Lower Arrow	1,370	59
Okanagan	1,123	136
Ootsa	2,666	50
Quesnel	2,380	100
Shuswap	1,135	120
Stuart	2,230	139
Tagish (total, 130) part	2,152	93
Takla	2,260	102
Teslin (total, 142) part	2,239	65
Upper Arrow	1,401	88
Northwest Territories—		
Aberdeen	135	475
Artillery	1,190	153
Aylmer	1,230	340
Baker	30	975
Clinton-Colden	1,230	253
Dubawnt	700	1,600
Faber	753	163
Franklin	..	175
Garry	..	980
Gras, de	1,300	345

4.—Elevations and Areas of Principal Lakes, by Province—concluded

Territory and Lake	Elevation	Area	Territory and Lake	Elevation	Area
	ft.	sq. miles		ft.	sq. miles
Northwest Territories—con.			**Northwest Territories**—conc.		
Great Bear	390	12,275	Rae	748	74
Great Slave	512	10,980	Schultz	125	110
Hardisty	699	107	Thaolintoa	..	160
Hottah	640	377	Todatara (total, 241) part	..	85
Kaminuriak	320	360	Yathkyed	480	860
La Martre	870	685			
Macdougal	..	265	**Yukon Territory**—		
MacKay	1,415	250	Aishihik	3,001	107
Maguse	..	540	Atlin (total, 299) part	2,192	1
Marian	513	90	Kluane	2,525	184
Nueltin (total, 850) part	920	260	Kusawa	2,200	56
Nutarawit	..	350	Laberge	2,100	87
Pelly	365	331	Tagish (total, 130) part	2,152	45
Point	1,200	295	Teslin (total, 142) part	2,239	96

Subsection 3.—Coastal Waters*

The coastline of Canada, one of the longest of any country in the world, comprises the following estimated milages:—

Mainland—
Atlantic, 6,110; Pacific, 1,580; Hudson Strait, 1,245; Hudson Bay, 3,155; Arctic, 5,770; total, 17,860 miles.

Islands—
Atlantic, 8,680; Pacific, 3,980; Hudson Strait, 60; Hudson Bay, 2,305; Arctic, 26,785; total, 41,810 miles.

A comprehensive description of the coastal waters of Canada would require information from sciences such as oceanography, marine biology and meteorology. However, the basic factor in any study of the oceanic-continental margin is the physical relief of the sea floor and the scope of the information presented here is therefore restricted to this and a few salient features of the Atlantic, Arctic and Pacific marginal seas surrounding Canada.

Atlantic.—Along this coastal area, the sea has inundated valleys and lower parts of the Appalachian Mountains as well as those of the Canadian Shield. The submerged Continental Shelf, protruding seaward from the shore, effects the transition from continental to oceanic conditions. This Shelf is distinguished by great width and diversity of relief. From the coast of Nova Scotia its width varies from 60 to 100 miles, from Newfoundland 120 to 50 miles (at the entrance of Hudson Strait), and northward it merges with that of the Arctic Ocean. The outer edge of the Shelf, known as the Continental Shoulder, is of varying depths of from 100 to 200 fathoms before the Shelf suddenly gives way to the steep declivity leading to abyssal depths. The over-all gradient of the Atlantic Continental Shelf is slight but the whole area is studded with shoals, plateaux, banks, ridges and islands and the coasts of Nova Scotia and Newfoundland are rugged and fringed with islets and shoals. Off Nova Scotia the 40-fathom line lies at an average of 12 miles from the shore and constitutes the danger line for coastal shipping. The whole floor of the marginal sea appears to be traversed by channels and gullies cutting well into the Shelf.

The main topographical features of the Atlantic marginal sea floor are attributed to glacial origin but land erosion is an important factor. Eroded materials are carried seaward by rivers, ice and wind, and wave action against cliffs and shore banks washes away enormous masses that are deposited over the surrounding sea floor. The topography of the continental sea floor is therefore constantly changing and navigation charts of Canada's eastern seaboard must be continuously revised.

Arctic.—The submerged plateau protruding from the northern coast of North America is a major part of the Great Continental (or Polar) Shelf surrounding the Arctic Ocean on which lie all the Arctic islands of Canada, Iceland, Greenland and most of those of

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* The Federal Government's oceanographic research program is outlined in Chapter XI on Mines and Minerals, Section 2, Subsection 1.

Europe and Asia. This Shelf develops its maximum width on the 80th meridian of west longitude where it extends from the south of James Bay to the north coast of Ellesmere Island, a distance of over 2,000 miles.

The floor topography of this continental margin is largely unexplored but sufficient has been charted to indicate an abrupt break at the northern oceanward edge. This steep continental terrace borders the whole western side of the Canadian Archipelago and constitutes one of the most striking and significant features of the Polar regions. From this declivity, deep well-developed troughs cut by glaciers enter between the western group of islands. A ridge across Davis Strait on which the depth is about 200 fathoms separates this basin from the open Atlantic.

Hudson Bay and Hudson Strait bite deeply into the Continent. Hudson Bay is an inland sea 250,000 sq. miles in area having an average depth of about 70 fathoms; the greatest charted depth in the centre of the Bay is 141 fathoms.

Hudson Strait separates Baffin Island from the continental coast and connects Hudson Bay with the Atlantic Ocean. It is 430 miles long and from 37 to 120 miles wide and its greatest charted depth of 481 fathoms is close inside the Atlantic entrance. Great irregularities of the sea floor are indicated but, except in inshore waters, few navigation hazards have been located.

That part of the Continental Shelf bordering the Arctic Ocean at the northwest edge of the Queen Elizabeth Islands is currently the subject of extensive study. In 1959, a party based at the joint Canadian–United States weather station at Isachsen on Ellef Ringnes Island made a reconnaissance survey of the oceanography, hydrography, submarine geology, gravity and magnetic features of the Shelf area, together with physiographic, hydrological and glaciological studies of the adjacent and intervening islands. These studies were carried out in preparation for an intensive program of survey and research started in 1960, which should ultimately yield detailed and accurate information on the physical and chemical composition and dynamic characteristics of the Arctic oceanic waters; the extent, topography and structure of the Shelf and the nature of its sediments, its underlying rocks and its possible mineral resources; the factors controlling the development of the Arctic landscape and the evolution of the islands; and the behaviour of sea level, glaciers, sea ice and climate in the recent geological past. Detailed studies are being carried out first on that part of the Continental Shelf lying out to sea from, and between, Meighen Island and Borden Island, with a reconnaissance to the southwest. The work will continue until all of the Canadian sector of the Polar Continental Shelf has been investigated.

Pacific.—The marginal sea of the Pacific differs strikingly from the other marine zones of Canada. The hydrography of British Columbia is characterized by bold, abrupt relief—a repetition of the mountainous landscape. Numerous inlets penetrate the mountainous coast for distances of 50 to 75 miles. They are usually a mile or two in width and of considerable depth, with steep canyon-like sides. From the islet-strewn coast, the Continental Shelf extends from 50 to 100 sea miles to its oceanward limit where depths of about 200 fathoms are found. There the sea floor drops rapidly to the Pacific Deeps, parts of the western slopes of Vancouver Island and the Queen Charlotte Islands lying only four miles and one mile, respectively, from the edge of the declivity. These great detached land masses are the dominant features of the Pacific marginal sea. As is to be expected in a region so irregular in hydrographic relief, shoals and pinnacle rocks are numerous, necessitating cautious navigation. A grave menace to coastal shipping plying the Seymour Narrows between Vancouver Island and the mainland was eliminated on Apr. 5, 1958 when the twin peaks were blasted off Ripple Rock in one of the largest non-atomic explosions created by man. The peaks had reached to within 9 feet and 21 feet of the surface during low water, and had been responsible for the sinking and damaging of some 114 vessels during the preceding 80 years. Their presence caused treacherous disturbances and whirlpools to form as the ocean tides rushed through the Narrows, and only the most highly powered vessel would attempt to navigate the channel during any period other than the 20 to 40 minutes of slack water between tides. The blast increased the clearance to 47 feet and 69 feet at low water and the channel is now navigable at all times.

Subsection 4.—Islands

The largest islands of Canada are in the north and all experience an Arctic climate. The northern group extends from the islands in James Bay to Ellesmere Island which reaches 83°07′N. Those in the District of Franklin lie north of the mainland of Canada and are generally referred to as the Canadian Arctic Archipelago; those in the extreme north—lying north of the M'Clure Strait–Viscount Melville Sound–Barrow Strait–Lancaster Sound water passage—are known as the Queen Elizabeth Islands.

On the West Coast, Vancouver Island and the Queen Charlotte Islands are the largest and the most important but the coastal waters are studded with many small rocky islands.

The Island of Newfoundland forming part of the Province of Newfoundland, the Province of Prince Edward Island, Cape Breton Island forming part of the Province of Nova Scotia, Grand Manan and Campobello Islands forming part of the Province of New Brunswick, and Anticosti Island and the Magdalen group included in the Province of Quebec are the chief islands off the East Coast.

Notable islands of the inland waters include Manitoulin Island (1,068 sq. miles in area) lying in Lake Huron, the so-called Thirty Thousand Islands of Georgian Bay and the Thousand Islands in the outlet from Lake Ontario into the St. Lawrence River.

5.—Islands over 2,000 Square Miles in Area

Island	Area	Island	Area
	sq. miles		sq. miles
Arctic Ocean—		**Arctic Ocean**—concluded	
Baffin	183,810	Prince Charles	3,500
Ellesmere	82,119	Cornwallis	2,670
Victoria	81,930	Amund Ringnes	2,515
Banks	23,230		
Devon	20,861		
Melville	16,141	**Atlantic Ocean—**	
Axel Heiberg	15,779	Newfoundland	42,734
Southampton	15,700	Cape Breton	3,970
Prince of Wales	12,830	Anticosti (Gulf of St. Lawrence)	3,043
Somerset	9,370	Prince Edward	2,184
Prince Patrick	6,081		
Bathurst	6,041		
Ellef Ringnes	5,139		
King William	4,870	**Pacific Ocean—**	
Bylot	4,200	Vancouver	12,408

Subsection 5.—Mountains and Other Heights

The predominant geographical feature in Canada is the Great Cordilleran Mountain System which contains many peaks over 10,000 feet in height. The highest peak in Canada is Mount Logan in the St. Elias Mountains of Yukon Territory, which rises 19,850 feet above sea level. The highest elevations in all parts of the country are shown in Table 6 in feet above mean sea level.

6.—Principal Heights in each Province and Territory

NOTE.—Certain peaks, indicated by an asterisk (*), form part of the line of demarcation between political subdivisions. Although their bases technically form part of both areas, they are listed only under one to avoid duplication.

Province and Height	Elevation	Province and Height	Elevation
	ft.		ft.
Newfoundland		**Newfoundland**—continued	
Long Range—		Blue Hills of Coteau—	
Blow Me Down Mountain	3,500	Peter Snout	1,690
Gros Morne	2,651	Butter Pot	950
Mount St. Gregory	2,338	Red Hill	700
Gros Pate	2,115	Central Highlands—	
Blue Mountain	2,085	Main Topsail	1,822
Table Mount	1,700	Mizzen Topsail	1,761

6.—Principal Heights in each Province and Territory—continued

Province and Height	Elevation
	ft.
Newfoundland—concluded	
Torngats—	
Cirque Mountain	5,500
Mount Eliot	4,560
Mount Tetragona	4,510
Mount Razorback	3,660
Mount Sir Donald	1,890
Cape Chidley	1,500
Kaumajets—	
Bishop's Mitre	2,250
Nova Scotia	
Ingonish Mountain	1,392
Creignish Hills (at Creignish)	850
Cobequid Mountains (at E Mapleton)	840
North Mountain (4 miles NE of Annapolis)	590
South Mountain (at Annapolis)	515
New Brunswick	
Mount Carleton	2,690
Green Mountain	1,596
Moose Mountain	1,490
Quebec	
Appalachians—	
Mount Jacques Cartier (Shickshocks)	4,160
Mount Richardson	3,885
Barn Mountain	3,775
Mount Logan	3,700
Mégantic Mountain	3,625
Mount Albert	3,550
Bayfield Mountain	3,470
Mattawa Mountain	3,370
Roundtop (Sutton Mountains)	3,175
Hereford Mountain	2,760
Orford Mountain	2,750
Pinnacle Mountain	2,150
Brome Mountain	1,800
Shefford Mountain	1,725
Shield—	
Mount Tremblant	3,150
Mount Ste. Anne	2,625
Mount Sir Wilfrid	2,569
Monteregian Hills—	
St. Hilaire Mountain	1,350
Yamaska Mountain	1,350
Rougemont	1,200
Mount Johnson	750
Mount Royal	750
Ontario	
Tip Top Hill	2,120
Mount Batchawana	2,100
Niagara Escarpment—	
Osler Bluff	1,700
Caledon Mountain	1,400
Blue Mountain	1,250
High Hill	1,150
Mount Nemo	1,000
Manitoba	
Duck Mountain	2,727
Porcupine Mountain	2,700
Riding Mountain	2,000
Saskatchewan	
Cypress Hills (Summit)	4,810
Wood Mountain (West Summit)	3,371
Wood Mountain (East Summit)	3,347
Vermilion Hills	2,500
Alberta	
Rockies—	
*Mount Columbia	12,294[1]
The Twins (N Peak)	12,085
Mount Forbes	11,902
Mount Alberta	11,874
*Mount Assiniboine	11,870[1]
Alberta—concluded	
Rockies—concluded	
The Twins (S Peak)	11,675
Mount Temple	11,636
Mount Kitchener	11,500
*Mount Lyell	11,495[1]
*Mount Hungabee	11,457[1]
Mount Athabasca	11,452
*Mount King Edward	11,400[1]
Stutfield	11,400
Mount Brazeau	11,386
*Mount Victoria	11,365[1]
*The Snow Dome	11,340[1]
*Mount Joffre	11,316[1]
*Mount Deltaform	11,235[1]
*Mount Lefroy	11,230[1]
*Mount Alexandra	11,214[1]
*Mount Sir Douglas	11,174[1]
Woolley	11,170
*Lunette Peak	11,150[1]
Mount Hector	11,135
Diadem Peak	11,060
Mount Edith Cavell	11,033
Mount Chown	10,930
Mount Wilson	10,631
Clearwater Mountain	10,420
Mount Coleman	10,262
Eiffel Peak	10,101
Pinnacle Mount	10,072
Mount Fryatt	10,026
Mount Rundle	9,838
The Three Sisters	9,744
Mount Eisenhower	8,750
Mount Edith	8,370
British Columbia	
Vancouver Island Range—	
Mount Albert Edward	6,968
Mount Arrowsmith	5,960
Coast Range—	
Mount Waddington	13,260
Tiedemann	12,000
Mount Tatlow	10,050
Skihist Mountain	9,660
Crown Mountain	6,060
St. Elias Mountains—	
*Mount Fairweather	15,300[2]
*Mount Root	12,860[2]
Columbia Mountains—	
Monashee—	
Mount Begbie	8,956
Storm Hill	5,300
Selkirks—	
Mount Sandford	11,590
Mount Wheeler	11,033
Selwyn	11,023
Mount Dawson	11,020
Adamant Mountain	10,980
Grand Mountain	10,842
Mount Sir Donald	10,818
Iconoclast Mountain	10,630
Mount Rogers	10,525
Purcells—	
Mount Delphine	11,076
Nelson Peak	10,772
Rockies—	
Mount Robson	12,972
Clemenceau	12,001
Mount Goodsir	11,686
Mount Bryce	11,507
Resplendent	11,240
Mount King George	11,226
Consolation	11,200
The Helmet	11,160
Whitehorn Mountain	11,101
Mount Huber	11,051

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[1] Part of the Alberta–British Columbia boundary.

[2] Part of the British Columbia–Alaska boundary.

6.—Principal Heights in each Province and Territory—concluded

Province or Territory and Height	Elevation
	ft.
British Columbia—concluded	
Rockies—concluded	
Geikie	11,016
Bush	11,000
Freshfield	10,945
Mount Mummery	10,918
Mount Vaux	10,881
*Mount Ball	10,865[1]
Mount Sir Alexander	10,740
Churchill Peak	10,500
Mount Stephen	10,495
Cathedral Mountain	10,464
Mount Gordon	10,346
President	10,287
Mount Odaray	10,175
Mount Laussedat	10,035
Mount Burgess	8,473
Yukon Territory	
St. Elias Mountains—	
Mount Logan	19,850
*Mount St. Elias	18,008[2]
Mount Lucania	17,150
King Peak	17,130
Mount Steele	16,440
Mount Wood	15,880
Yukon Territory—concluded	
St. Elias Mountains—concluded	
*Mount Vancouver	15,700[2]
*Mount Hubbard	14,950[2]
Mount Walsh	14,780
*Mount Alverstone	14,500[2]
McArthur Peak	14,400
Mount Augusta	14,070
Strickland	13,818
Mount Newton	13,811
Mount Cook	13,760
Mount Craig	13,250
Badham	12,625
Mount Malaspina	12,150
Mount Jeannette	11,700
Baird	11,375
Mount Seattle	10,070
Northwest Territories	
Franklin Mountains—	
Mount Delthore	6,800
Mount Clark	4,733
Mount Rawlinson	5,000
Nelson Head	1,000
Mount Pelly	675

[1] Part of the Alberta-British Columbia boundary.

[2] Part of the Yukon-Alaska boundary.

Section 2.—Physical and Economic Features of the Provinces and Territories

Politically, Canada is divided into ten provinces and two territories. Each of the provinces is sovereign in its own sphere, as set out in the British North America Act of 1867 and its amendments, and as new provinces have been organized (see p. 50) they have been granted political status equivalent to that of the original provinces. The Yukon and Northwest Territories are administered by the Federal Government, although they are gaining an increasing voice in their affairs through elected representatives in the House of Commons, through elected representatives on the Territorial Councils, and through municipal and other local organizations. The main physical and economic features of each of the provinces and of the territories are described briefly in the 1956 Year Book at pp. 12-17. The physical characteristics of the provinces and territories are also covered very adequately in their relation to climate in the special article on The Climate of Canada which appears in the 1959 edition at pp. 23-51. Details of resources and their development are given in later chapters of this volume.

PART III.—LAND RESOURCES AND PUBLIC LANDS

Section 1.—Land Resources

Information currently available regarding Canada's vast land resources is shown in Table 1, where the land area is classified as occupied agricultural, forested and 'other' land, the latter including urban land, road allowances, grass and brush land and all waste land such as open muskeg, swamp and rock. Soil surveys now under way by the Department of Agriculture will make it possible in the future to estimate the amount of arable land Canada possesses and, as provincial inventories are completed, more information will be available regarding land now non-forested but not productive in an agricultural sense. The Department of Forestry estimates that about 48 p.c. of the land area of Canada is forested and, according to the Census of 1956, less than 8 p.c. is classed as occupied farm land. A great part of the 1,607,121 sq. miles of 'other' land is located in the Yukon and Northwest Territories which together have a land area of 1,458,784 sq. miles. The occupied farm land in these Territories is practically nil and the forested area is estimated at 275,800 sq. miles.

1.—Land Area classified as Occupied Agricultural or Forested, by Province

NOTE.—Figures for occupied agricultural land were obtained from the 1956 Census; areas of forested land were compiled by the Department of Forestry from estimates supplied by the Forestry Service in each province.

Description	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and N.W.T.	Canada
	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles
Occupied Agricultural Land—												
Improved—Crops and summerfallow...	25	659	655	985	8,776	13,365	16,427	60,428	34,284	1,215	[1]	136,819
Pasture..................	9	314	252	395	4,129	5,423	929	1,763	2,000	500	[1]	15,715
Other....................	4	36	77	106	579	856	540	1,100	820	108	[1]	4,226
Unimproved—Forest (woodland)[2].....	42	522	2,447	2,662	7,622	5,217	2,448	3,717	4,517	1,337	1	30,532
Other..................	32	134	906	510	3,754	6,201	7,674	31,108	30,208	3,932	5	84,464
Totals, Occupied Agricultural Land	**112**	**1,665**	**4,337**	**4,658**	**24,860**	**31,062**	**28,018**	**98,116**	**71,829**	**7,092**	**7**	**271,756**
Forested Land—												
Softwood— Merchantable...........	24,533	78	7,270	6,313	119,819	44,769	14,689	10,117	13,545	80,330	35,200	356,663
Young growth...........	4,952	186	789	2,895	47,876	36,958	20,434	2,735	14,819	87,786	10,000	229,430
Mixedwood—Merchantable...........	403	133	5,458	7,318	23,945	25,002	5,487	9,011	12,377	—	19,800	108,934
Young growth...........	269	122	458	2,047	18,122	34,323	6,599	5,045	10,990	—	3,500	81,475
Hardwood— Merchantable...........	9	12	660	1,944	3,105	6,006	3,497	9,205	4,967	3,945	4,700	38,050
Young growth...........	244	11	45	955	5,939	17,494	4,950	1,773	13,258	7,953	2,500	55,122
Unclassified[3]........................	45,164	2	426	2,336	1,466	1,189	3,011	3,122	45,462	28,397	—	130,575
Totals, Productive Forested Land..	75,574	544	15,106	23,808	220,272	165,741	58,667	41,008	115,418	208,411	75,700	1,000,249
Non-productive Forested Land[4].....	12,218	2	1,283	521	157,808	96,006	64,638	76,730	43,111	59,227	200,100	711,644
Totals, Forested Land..............	**87,792**	**546**	**16,389**	**24,329**	**378,080**	**261,747**	**123,305**	**117,738**	**158,529**	**267,638**	**275,800**	**1,711,893**
Net Productive Land[5]................	**75,644**	**1,687**	**16,996**	**25,804**	**237,510**	**191,586**	**84,237**	**135,407**	**182,730**	**214,166**	**75,706**	**1,241,473**
Other Land[6].........................	**55,183**	**495**	**2,123**	**1,510**	**128,542**	**56,500**	**62,900**	**8,045**	**22,959**	**85,886**	**1,182,978**	**1,607,121**
Totals, Land Area[7]..................	**143,045**	**2,184**	**20,402**	**27,835**	**523,860**	**344,092**	**211,775**	**220,182**	**248,800**	**359,279**	**1,458.784**	**3,560,238**

[1] Less than one square mile. [2] Included in *Forested Land;* duplication eliminated in the item *Net Productive Land.* [3] Includes areas of recent burn, cut-over or windfall, not yet re-stocked. [4] Areas incapable of producing crops of merchantable timber because of adverse climatic, soil or moisture conditions. [5] Includes only occupied agricultural land (less forest woodland) plus productive forested land. [6] Comprises all urban land, road allowances, grass and brush land and all waste land such as open muskeg, swamp and rock. [7] *Net Productive Land* plus *Non-productive Forested Land* plus *Other Land.*

Section 2.—Public Lands

In Table 2 classifying the area of Canada by tenure, items 2, 3, 4 and 5 are obtained from Federal Government sources and items 1, 6, 7 and 8 from Provincial Government sources.

2.—Total Area classified by Tenure (circa) 1960

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles
1. Privately owned land or land in process of alienation from the Crown	6,743	2,058	16,430	15,443	43,500	41,300	45,987	104,493	94,522	19,362	77	389,915
2. Federal lands other than leased lands, National Parks, Indian reserves and forest experiment stations	937	105	194	721	342[1]	2,341	6,819	8,376	5,542	970	1,508,268[3]	1,534,615
3. National Parks	156	7	368	80	[2]	12	1,148	1,496	20,717[4]	1,671	3,625[5]	29,280
4. Indian reserves	—	4	40	59	280	2,430	819	1,884	2,418	1,278	9	9,221
5. Federal forest experiment stations	—	—	—	35	7	97	[6]	—	47	—	—	186
6. Provincial lands other than Provincial Parks and provincial forest reserves	148,159	8	4,392	10,612	513,301	341,638	189,899	13,690	123,281	286,907	—	1,631,887
7. Provincial Parks	73	[2]	1	—	31,110	5,238	978[7]	1,600	139	13,162	—	52,301
8. Provincial forest reserves	117	2	—	1,404	6,320	19,526	5,350[7]	120,161	8,619	42,905	—	204,404
Totals	**156,185**	**2,184**	**21,425**	**28,354**	**594,860**	**412,582**	**251,000**	**251,700**	**255,285**	**366,255**	**1,511,979**	**3,851,809**

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[1] Includes Gatineau Park (86 sq. miles) and Quebec Battlefields Park (0.36 sq. mile) which are under federal jurisdiction but are not technically National Parks.
[2] Less than one square mile.
[3] Includes 952,849 sq. miles set aside by Order in Council as native game preserves in which only Indians and Eskimos may hunt, but which are not regarded as National Parks.
[4] Includes Wood Buffalo Park (13,675 sq. miles) which, although established under the National Parks Act, is administered by the Northern Administration Branch, Department of Northern Affairs and National Resources.
[5] That part of Wood Buffalo Park in N.W.T.
[6] A forest experiment area of 25 sq. miles is included in National Parks figure.
[7] Provincial forest reserves are also used to some extent as recreational areas.

Subsection 1.—Federal Public Lands

Public lands under the administration of the Federal Government comprise lands in the Northwest Territories including the Arctic Archipelago and the islands in Hudson Strait, Hudson Bay and James Bay, lands in Yukon Territory, Ordnance and Admiralty Lands, National Parks and National Historic Sites, Forest Experiment Stations, Experimental Farms, Indian reserves and, in general, all public lands held by the several Departments of the Federal Government for various purposes connected with federal administration (see Table **2**). These lands are administered under the Territorial Lands Act (RSC 1952, c. 263) and the Public Lands Grants Act (RSC 1952, c. 224) which became effective June 1, 1950 and replaced previous legislation.

The largest areas under federal jurisdiction are in the Northwest Territories and Yukon Territory where only 77 sq. miles of a total area of 1,511,979 sq. miles are privately owned. This part of the national domain, with the exception of the islands in Hudson Bay and James Bay, is all north of the 60th parallel of latitude and occupies about 40 p.c. of the surface of Canada. It is under the administration of the Northern Administration Branch of the Department of Northern Affairs and National Resources.

Subsection 2.—Provincial Public Lands

Public lands of Nova Scotia, New Brunswick, Quebec, Ontario and British Columbia (except the Railway Belt and Peace River Block) have been administered since Confederation by the provincial governments. In 1930 the Federal Government transferred the unalienated portions of the natural resources of Manitoba, Saskatchewan and Alberta and of sections of British Columbia to the respective governments, and all unalienated lands in the Province of Newfoundland, except those administered by the Federal Government, became provincial public lands under the Terms of Union on Mar. 31, 1949. All land in the Province of Prince Edward Island has been alienated except 126 sq. miles under federal or provincial administration.

Information regarding provincial public lands may be obtained from the respective provinces. (See the Directory of Sources of Official Information, Chapter XXVI, under "Lands".)

Subsection 3.—National and Provincial Parks

The future of Canada in the field of outdoor recreation is being wisely provided for by the establishment of National and Provincial Parks. Many of these parks are easily accessible by highway, rail or air and offer every type of accommodation from camping facilities to cabins and palatial hotels. A wide variety of summer and winter recreational attractions is available in mountain, lakeland, woodland and seaside areas of exceptional scenic beauty.

The extent of the park areas in each province is given in Table **2**; location, year of establishment, area, and main characteristics of each National Park are given in Table **3**, which is followed by a brief description of the Provincial Parks.

National Parks.—Since 1885 when the first National Park was established around the mineral hot springs in western Alberta at what is now Banff, 18 areas with a total extent of more than 29,200 sq. miles have been established as National Parks. These parks are maintained by the Federal Government for the protection of their flora, fauna and natural phenomena, and for the preservation of their scenic beauty and national interest. They are administered by the National Parks Branch, Department of Northern Affairs and National Resources, and are developed and maintained in such manner as to constitute museums of nature for the perpetual inspiration, education and recreational use of present and future generations.

The National Parks are among Canada's greatest visitor attractions. All types of accommodation are available in privately owned hotels, chalets, lodges, motels and bungalow camps. In many parks, modern camp grounds and trailer sites have been prepared for the use of visitors travelling with their own camping equipment. Numerous recreational facilities are available—supervised bathing beaches, playgrounds, golf courses, tennis courts, bowling greens and athletic fields. In Banff, Kootenay and Jasper Parks where hot mineral springs occur, the Parks Service has provided outdoor pools, plunge baths and dressing-room facilities, and in other parks outdoor pools, with heated water, have been built. Several of the western parks are year-round resorts—at Banff, Jasper, Waterton Lakes and Mount Revelstoke Parks the skiing is excellent. Ski lifts and tows are in operation in Banff and Jasper Parks, and a chair lift on Mount Norquay and a sedan lift on Whitehorn Mountain, both in Banff, are added attractions. The chair lift on Mount Norquay and a gondola lift on Sulphur Mountain in Banff Park are operated for sightseeing purposes during the summer months. Of special interest to visitors is the Banff School of Fine Arts, where summer courses are conducted by the University of Alberta; also, the New Brunswick School of Arts and Crafts, operated by the provincial Department of Industry and Development, gives short courses in handicrafts to persons holidaying in Fundy Park.

A park warden service is supervised by the park superintendents to protect the forest and wildlife and to maintain constant vigilance for the safety and comfort of visitors. Angling opportunities in park waters are improved and extended by the stocking of game fish, a program assisted by the operation of fish hatcheries in three of the mountain National Parks. The Scientific Management of Game Fish in Canada's National Parks is the subject of a special article on pp. 35-39 of the 1956 Year Book. Two of the National Parks, Wood Buffalo and Elk Island, form sanctuaries for herds of buffalo and other forms of wild animal life.

In addition to the scenic, recreational and wild animal parks, Canada has 20 national historic parks. The National Parks Branch of the Department of Northern Affairs and National Resources is also responsible for the marking, preservation and restoration of places of national historic interest in Canada. More than 550 such sites have been marked on the recommendation of the Historic Sites and Monuments Board of Canada.

3.—Location, Year Established, Area and Characteristics of National Parks

Park	Location	Year Established	Area	Characteristics
			sq. miles	
Scenic, Recreational and Animal Parks				
Terra Nova	On Bonavista Bay, Newfoundland, 150 miles north of St. John's.	1957	156.0	Maritime area now under development; rocky headlands, wooded areas with abundant wildlife, off-shore and fresh-water fishing. Serviced camp ground.
Prince Edward Island	North shore of Prince Edward Island.	1937	7.0	Strip 25 miles long on shores of the Gulf of St. Lawrence. Recreational area, fine bathing beaches. Accessible by highway. Hotel and bungalow cabin accommodation. Serviced camp grounds.
Cape Breton Highlands	Northern part of Cape Breton Island, N.S.	1936	367.0	Rugged Atlantic coast line with mountain background. Fine seascapes. Recreational opportunities. Hotel and bungalow cabin accommodation. Serviced camp grounds.
Fundy	On Bay of Fundy between Moncton and Saint John in New Brunswick.	1948	79.5	Delightful recreational area. Forested region, wildlife sanctuary, rugged terrain. Bungalow cabin accommodation. Serviced camp grounds.
Georgian Bay Islands	In Georgian Bay, north of Midland, Ont.	1929	5.4	Recreational and camping area. Unique pillars on Flowerpot Island. Accessible by boat from nearby mainland points. Serviced and unserviced camp grounds on Beausoleil Island.

3.—Location, Year Established, Area and Characteristics of National Parks—continued

Park	Location	Year Established	Area	Characteristics
			sq. miles	
Scenic, Recreational and Animal Parks—continued				
Point Pelee	On Lake Erie in southwestern Ontario.	1918	6.0	Recreational area. Remarkable beaches, southern flora. Resting place for migratory birds. Accessible by highway. Hotel and bungalow cabin accommodation. Serviced camp ground.
St. Lawrence Islands	In St. Lawrence River between Brockville and Kingston, Ont.	1914	172.0 (acres)	Mainland area and 12 islands among Thousand Islands. Recreational and camping area. Accessible by highway; by boat from nearby mainland points.
Riding Mountain	Southwestern Manitoba, west of Lake Winnipeg.	1929	1,148.0	Playground and wildlife sanctuary on summit of escarpment. Fine lakes. Accessible by highway. Hotel and bungalow cabin accommodation. Serviced and unserviced camp grounds.
Prince Albert	Central Saskatchewan, north of Prince Albert.	1927	1,496.0	Forested region dotted with lakes and interlaced with streams. Summer playground and recreational area. Accessible by highway. Hotel and bungalow cabin accommodation. Serviced and unserviced camp grounds.
Banff	Western Alberta, on east slope of Rockies.	1885	2,564.0	Magnificent scenic area; noted resorts, Banff and Lake Louise. Mineral hot springs; summer and winter sports. Accessible by rail and highway. Hotel and bungalow cabin accommodation. Serviced and unserviced camp grounds.
Elk Island	Central Alberta, near Edmonton.	1913	75.0	Fenced preserve containing large herd of buffalo; also deer, elk and moose. Popular recreational area. Accessible by highway. Bungalow cabin accommodation and serviced camp ground.
Jasper	Western Alberta, on east slope of Rockies.	1907	4,200.0	Mountain playground and noted wildlife sanctuary. Majestic peaks, ice fields, beautiful lakes and famous resort, Jasper. Mineral hot springs, summer and winter sports. Accessible by rail and highway. Hotel and bungalow cabin accommodation. Serviced and unserviced camp grounds.
Waterton Lakes	Southern Alberta, adjoining Glacier Park in Montana, U.S.A.	1895	203.0	Canadian section, Waterton-Glacier International Peace Park. Mountain playground with spectacular peaks and beautiful lakes. Accessible by highway. Hotel and bungalow cabin accommodation. Serviced and unserviced camp grounds.
Glacier	Southeastern British Columbia, on summit of the Selkirk Range.	1886	521.0	Superb alpine region, towering peaks, glaciers and forests. Accessible by rail only. Climbing, skiing, camping.
Kootenay	Southeastern British Columbia, on west slope of Rockies.	1920	543.0	Encompasses Vermilion-Sinclair section of Banff - Windermere Highway. Broad valleys, deep canyons, mineral hot springs. Hotel and bungalow cabin accommodation. Serviced and unserviced camp grounds.
Mount Revelstoke	Southeastern British Columbia, on west slope of Selkirks.	1914	100.0	Rolling mountain-top plateau. Colourful alpine meadows. Accessible by secondary highway. Summer accommodation in Park; all-year accommodation in town of Revelstoke. Championship ski runs and ski jump. Unserviced camp grounds.

3.—Location, Year Established, Area and Characteristics of National Parks—continued

Park	Location	Year Established	Area	Characteristics
			sq. miles	
Scenic, Recreational and Animal Parks—concluded				
Yoho	Eastern British Columbia, on west slope of Rockies.	1886	507.0	Lofty peaks, magnificent waterfalls, colourful lakes. Yoho and Kicking Horse Valleys. Accessible by rail and highway. Hotel and bungalow cabin accommodation. Serviced and unserviced camp grounds.
Wood Buffalo[1]	Partly in Alberta and partly in Northwest Territories, between Athabasca and Slave Rivers.	1922	17,300.0	Immense region of forests and open plains. Home of largest remaining herd of bison on the Continent. Other wildlife abundant.
Historic Parks			acres	
Signal Hill	St. John's, Nfld.	1958	243.4	Location of military installations and site of operations and battles in 1700's. Cabot Tower.
Fort Amherst	Prince Edward Island, near Rocky Point.	1959	222.0	Remaining earthworks of original fort.
Fort Anne	Nova Scotia, at Annapolis Royal.	1917	31.0	Site of early Acadian settlement. Museum and well-preserved earthworks.
Fortress of Louisbourg	Cape Breton Island, N.S., 25 miles from Sydney.	1941	339.5	Ruins of walled city erected by the French, 1713-58. Interesting excavations. Museum.
Halifax Citadel	Halifax, N.S.	1956	36.9	Defence post constructed 1828-35. Museums.
Port Royal	Port Royal, N.S., 8 miles from Annapolis Royal.	1941	20.5	Restoration of "Habitation"—first fort built in 1605 by Champlain and DeMonts.
Alexander Graham Bell	Baddeck, N.S.	1955	14.0	Museum contains mechanical and documentary records of research by the inventor.
Grand Pré	Grand Pré, N.S.	1957	14.0	Commemorates the story of the Acadians.
Fort Beauséjour	New Brunswick, near Sackville.	1926	81.3	Site of French fort erected in middle of 18th century. Museum.
Fort Moncton	New Brunswick, near Shediac.	1929	2.1	Built in 1751 by the French; captured by British in 1755. Contains remains of trenches. Lighthouse.
Fort Chambly	Chambly, Que.	1941	2.5	Original French fort built on Richelieu River in 1665 was burned. Present fort built by English in 1709-11. Museum.
Fort Lennox	Île aux Noix, Que., near St. Johns.	1941	210.0	Original fort, Île aux Noix, built by French in 1759. Fort Lennox built by English in 1820's.
Cartier-Brébeuf	Quebec, Que.	1957	14.0	Commemorates the 1535 wintering of Jacques Cartier and party.
Sir Wilfrid Laurier's Birthplace.	St. Lin, Que.	1941	1.0	Original house containing furniture of the period.
Fort Malden	Amherstburg, Ont.	1941	8.0	Site of defence post built 1797-99. Museums.
Fort St. Joseph	St. Joseph's Island, Ont.	1926	47.0	Site of most westerly military post in Upper Canada. Built in 1796-99. Active in War of 1812-14. Remains of some of old fort buildings.
Fort Wellington	Prescott, Ont.	1941	8.5	Defence post built 1812-13. Museum.

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[1] Administered by the Northern Administration Branch, Department of Northern Affairs and National Resources.

3.—Location, Year Established, Area and Characteristics of National Parks—concluded

Park	Location	Year Established	area	Characteristics
			acres	
Historic Parks —concluded				
Woodside	Kitchener, Ont.	1954	12.0	Boyhood home of the Rt. Hon. William Lyon Mackenzie King, former Prime Minister of Canada.
Fort Prince of Wales	Northern Manitoba, near Churchill.	1941	50.0	Ruins of fort built 1733-71 to secure control of Hudson Bay for England.
Lower Fort Garry	Manitoba, 20 miles north of Winnipeg.	1951	13.0	Stone-walled fort built by the Hudson's Bay Company between 1831 and 1839.
Batoche Rectory	Saskatchewan, near Duck Lake.	1954	1.3	Scene of Northwest Rebellion, 1885. Ancient rectory and adjoining Middleton's trenches.
Fort Battleford	Saskatchewan, 4 miles south of North Battleford.	1951	36.7	North West Mounted Police post built in 1876.
Fort Langley	Fort Langley, B.C.	1958	9.0	Present fort built in 1840. First permanent British settlement in British Columbia. Museum.

Evidence of the increasing attraction of Canada's National Parks is shown by the growing numbers of visitors given in Table 4.

4.—Visitors to National Parks, 1958-60

Park	Years ended Mar. 31— 1958	1959	1960	Apr. 1–Dec. 31, 1960
	No.	No.	No.	No.
Scenic, Recreational and Animal Parks				
Terra Nova	..	..	..	..
Prince Edward Island	200,748	206,245	224,781	412,463
Cape Breton Highlands	128,397	162,938	193,684	323,392
Fundy	143,662	179,277	199,777	227,262
Georgian Bay Islands	26,300	14,521	17,630	19,657
Point Pelee	591,235	604,149	745,528	519,078
St. Lawrence Islands	59,250	53,573	53,745	61,522
Riding Mountain	630,189	667,561	659,995	590,479
Prince Albert	123,280	135,546	136,818	137,801
Banff	790,910	880,150	980,069	941,229
Elk Island	183,041	222,695	196,862	179,491
Jasper	332,024	332,251	324,857	334,845
Waterton Lakes	302,872	362,829	340,220	349,496
Glacier	222	386	347	287
Kootenay	347,678	385,736	440,031	438,871
Mount Revelstoke	39,028	27,669	16,089	36,699
Yoho	41,875	51,817	70,001	59,212
Wood Buffalo	..	..	..	..
Totals, Scenic, Recreational and Animal Parks	**3,940,711**	**4,287,343**	**4,600,434**	**4,631,784**
Historic Parks				
Signal Hill	500[1]	3,140[2]	7,130[2]	108,184
Fort Amherst	..	..	..	893
Fort Anne	24,052	30,443	31,159	56,775
Fortress of Louisbourg	20,705	25,796	21,625	23,915
Halifax Citadel	234,000	137,259	190,383	196,027
Port Royal Habitation	23,441	28,085	28,071	19,842
Alexander Graham Bell Museum	36,053	45,804	47,122	59,640
Grand Pré	31,362	38,945	38,981	34,316

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[1] Estimated. [2] Registrations only.

4.—Visitors to National Parks, 1958-60—concluded

Park	Years ended Mar. 31—			Apr. 1–Dec. 31, 1960
	1958	1959	1960	
	No.	No.	No.	No.
Historic Parks—concluded				
Fort Beauséjour	13,778	16,051	21,369	31,594
Fort Moncton	..	..	..	2,643
Fort Chambly	72,965	56,804	67,438	67,614
Fort Lennox	13,335	10,816	9,865	30,725
Cartier-Brébeuf	..	10,200[1]	10,365	..
Sir Wilfrid Laurier's Birthplace	4,650[1]	6,363	5,993	7,237
Fort Malden	21,197	28,855	32,132	37,787
Fort St. Joseph	..	..	..	850
Fort Wellington	17,426	18,859	28,732	45,480
Woodside	1,284	2,046	4,972	4,781
Fort Prince of Wales	550[1]	425	647	1,251
Lower Fort Garry	21,300[1]	15,000[1]	33,229	42,787
Batoche Rectory	800[1]	600[1]	936	5,896
Fort Battleford	15,214	18,099	15,499	28,078
Fort Langley	3,500[1]	55,010	45,870	79,328
Totals, Historic Parks	**556,112**	**548,600**	**641,518**	**885,643**
Grand Totals	**4,496,823**	**4,835,943**	**5,241,952**	**5,517,427**

[1] Estimated.

Provincial Parks.—In addition to the National Parks described above, most of the provincial governments have established parks within their boundaries. These parks, in the same way as the National Parks, are areas of scenic or other interest, preserved and maintained for the benefit of the public although many of them are still undeveloped. The more important parks in each province are mentioned briefly in the following paragraphs.

Newfoundland.—There are 73 sq. miles of provincial parkland in Newfoundland. Sir Richard Squires Memorial Park, an area of 6 sq. miles on the Upper Humber River, and Butterpot Park, an area of 7 sq. miles near St. John's, are under development. Two larger areas—42 sq. miles on the west coast known as Serpentine Park and 16 sq. miles in central Newfoundland—are undeveloped. In addition, 12 rest and camping parks have been completed along the route of the Trans-Canada Highway, each park containing about 100 acres.

Prince Edward Island.—Three properties consisting of 150 acres have been developed as provincial parks: Strathgartney Park, a 40-acre tract of land at Churchill on the Trans-Canada Highway between Charlottetown and Borden, is an excellent picnic and camp site with attractive hardwood groves, fresh spring water and a beautiful view over West River and the surrounding country; Lord Selkirk Park at Eldon has an area of 30 acres and is of historic interest in that it contains an old French cemetery and marks the spot on the shoreline where Lord Selkirk landed; Brudenell River Park at Roseneath along the shore of the Brudenell River comprises 80 acres, much of it woodland. These parks are maintained by the Department of Industry and Natural Resources. Another 200-acre tract, to be known as Sir Andrew MacPhail's Park, is under development.

Nova Scotia.—Good progress is being made in the establishment of picnic and camping facilities under the Department of Lands and Forests provincial parks program, which provides for the construction of such parks to specified minimum standards. By the end of 1960, 14 picnic and six camping areas had been opened and plans were under way to establish additional parks to be located at naturally scenic spots on or close to the Trans-Canada and other well-travelled highways throughout the province. Several privately owned areas were donated for this purpose and the possibilities of others were being assessed prior to devolopment planning.

The Department operates the Provincial Wildlife Park at Shubenacadie, a 30-acre tract of land maintained in its natural state, as far as is consistent with the need for providing food and protection for the animals and birds that are its main attraction. Facilities of the Park are such that visitors, numbering about 200,000 annually, may see the wildlife at close range. Expansion is planned as more varieties of animals and birds become available and can be absorbed.

Quebec.—The Province of Quebec has established six provincial parks and seven Fish and Game Reserves. Five of the park areas are quite extensive. Saguenay Park, on the north shore of the St. Lawrence River in Saguenay County, has an area of 21,000 sq. miles; La Vérendrye Park, 140 miles northwest of Montreal, has an area of 4,746 sq. miles; Laurentide Park, 30 miles north of Quebec City, is 3,612 sq. miles in extent; Mont Tremblant, 80 miles north of Montreal, 1,223 sq. miles; and Gaspesian Park, Gaspe Peninsula, 514 sq. miles. Mount Orford Park, situated 15 miles west of Sherbrooke, has an area of 15 sq. miles.

The Fish and Game Reserves together occupy more than 10,000 sq. miles. The Chibougamau Reserve and the Mistassini Reserve, both northwest of Lake St. John, cover 3,400 sq. miles and 5,200 sq. miles, respectively. Smaller reserves are the Kipawa Reserve in the Témiscamingue district, the Shickshock Reserve adjoining Gaspesian Park, and the Petite Cascapedia and the Port Daniel, reserved for salmon and trout fishing, both of which lie along the Bay of Chaleur in Gaspe Peninsula.

These parks and reserves are wilderness areas of great scenic interest—for the most part mountainous country threaded with many rivers, lakes and streams and abounding in wildlife. In all of them, except Mount Orford, excellent fishing may be found and most of them have been organized to accommodate sportsmen and tourists in camps, cottages and lodges. Mont Tremblant is a famous resort area in both summer and winter and is easily reached by highway from Montreal. The Department of Game administers the parks and reserves, and also six salmon streams which are open to anglers.

Ontario.—The provincial park program in Ontario has been greatly expanded in recent years—only six provincial parks were in existence in 1954 but such parks now number 54 and, in addition, 23 provincial camp and picnic grounds and four provincial picnic grounds have been established.

The four largest provincial parks—Algonquin, Quetico, Lake Superior and Sibley—together have an area of nearly 4,700 sq. miles. Algonquin, 180 miles north of Toronto and 105 miles west of Ottawa, has several camp grounds which are accessible by car from Highway 60 and its numerous waterways may be traversed and enjoyed by canoe. There are several commercial children's camps in the Park but the present administration policy is to provide development facilities, such as camp grounds, on the Park fringes and to retain the interior in a natural condition. The interiors of Quetico and Lake Superior Parks are also retained as wilderness areas with only fringe development. Quetico Park is accessible by road at the Dawson Trail Campground on French Lake, and also by water via Basswood Lake in the south. Highway 17 north from Sault Ste. Marie provides access to Lake Superior Park, and Sibley Park may be reached by road from Highway 17 east from Port Arthur. There are nominal charges for entry of automobiles into provincial parks and into camp and some picnic grounds; charges for camping overnight are also nominal.

In addition to established parklands, other areas are in process of acquisition, are reserved for future development, or are being investigated. Under the Wilderness Areas Act, which came into effect in 1959, 28 such areas have now been established. These tracts of land, widely distributed across the province, vary in size, character and significance but all are regarded as important for their historical, scientific, aesthetic or cultural values. The largest is a 225-sq. mile area of treeless tundra in the northeastern tip of the province, jutting out at the base of Hudson Bay where it meets James Bay. All the other areas are small and none exceeds 640 acres. Perhaps the most widely known is the Sleeping Giant, a geological formation resembling a recumbent man, in Thunder Bay at the Lakehead.

The parklands of Ontario are administered by the Parks Branch of the Department of Lands and Forests, Parliament Buildings, Toronto, from which detailed information in booklet form is available.

Manitoba.—The Province of Manitoba has established 66 areas, totalling 978 sq. miles, as roadside parks and recreational areas. Also in the province are ten forest reserves having a total area of 5,350 sq. miles, which are used to a certain extent for recreational purposes.

Saskatchewan.—Saskatchewan has 13 provincial parks with a total area of about 1,600 sq. miles. Cypress Hills, Duck Mountain, Greenwater Lake, Moose Mountain and Valley Centre are operated as summer resorts with chalet, lodge, cabin and trailer accommodation as well as camping and picnic facilities. The other parks have camping, picnicking, boating and swimming facilities. Recreational activities include fishing, boating, swimming, golf, tennis, dancing, baseball, hiking, nature study, horseback riding, etc., and the parks are all well fitted with playground and beach equipment for children. In Cypress Hills Park, elk, antelope, deer, sharp-tailed grouse and beaver are plentiful and brook and other trout abound in the streams and lakes. Heavy stands of tall, straight lodgepole pine provide forest cover in this area. In Duck Mountain, Moose Mountain and Greenwater Lake Parks, moose, elk, deer, bear and beaver are common as well as several varieties of grouse, and many species of water and smaller land birds. Spruce, poplar and white birch provide excellent cover for wildlife. Pickerel, pike and perch are prevalent in most of the lakes. Lake trout are ardently sought by fishermen in the northern lakes.

Sites of historic interest are marked throughout the province and include the Touchwood Hills Hudson's Bay Post, where picnic facilities are available.

Alberta.—In Alberta, 41 provincial parks have been established, with a total area of about 139 sq. miles. Of these, 36 are under development. Cypress Hills Provincial Park, with an area of 77 sq. miles, is the largest and is situated in the southeast portion of the province. The other Parks under development are: Aspen Beach, Beauvais Lake, Big Hill Springs, Bow Valley, Bragg Creek, Crimson Lake, Cross Lake, Dillberry Lake, Entrance, Garner Lake, Gooseberry Lake, Hommy, Kinbrook Island, Lac Cardinal, Little Bow, Little Fish Lake, Long Lake, Ma-Me-O Beach, Miquelon Lake, Moonshine Lake, O'Brien, Park Lake, Pembina River, Red Lodge, Rochon Sands, Saskatoon Island, Steveville Dinosaur, Taber, Thunder Lake, The Vermilion, Wabamun Lake, Williamson, Willow Creek, Winagami Lake, Woolford, and Writing-on-Stone. These parks generally are provided with picnic, camping and playground facilities and are maintained by the Department of Lands and Forests primarily for the recreation and enjoyment of the residents of the province. A former provincial park—Sylvan Lake—is now operated by the Department of Highways as a camp site.

In addition to the recreational parks, seven sites, with a total area of 119 acres, have been established to mark and preserve locations of historic interest in the province. They include: Fort DeL'Isle, Fort Vermilion, Ribstones, Twelve Foot Davis, Massacre Butte, Early Man, and Standoff.

British Columbia.—There are 165 provincial parks in British Columbia with a total area of about 13,162 sq. miles. These parks are classified as A, B and C. Class A parks are those considered most highly for immediate recreational development and are strongly protected. Class B parks are areas slated for development—valuable wilderness areas or places set aside for a specific reason. Class C parks are intended primarily for the use of local residents and are usually under Board management. The parks are in all stages of development and dedicated to a variety of recreational uses. There are immense wilderness areas such as Tweedsmuir and Wells Gray Parks and outstanding scenic and mountain places which include Garibaldi, Mount Robson and E. C. Manning Parks. Thousands of city dwellers throng to the ski slopes of Mount Seymour or picnic at Cultus Lake Park. The formal gardens of Peace Arch are a monument to the goodwill between Canada and the United States. Vancouver Island has a chain of small forest parks that have achieved a tremendous popularity with tourists—the best known are Little Qualicum Falls and Miracle Beach. In addition there is a camp-site system closely integrated with the provincial parks, many camp sites actually being located in the parks. The famous gold town of Barkerville has become the first Provincial Historical Park. A new venture is the establishment of a marine park system; there are now five marine parks, all with water access.

Subsection 4.—Canada's National Capital*

Ottawa, the city selected by Queen Victoria in 1857 to be the seat of government for the Province of Canada in British North America, was designated the National Capital upon Confederation on July 1, 1867. The community had grown out of the military and construction camp that served as headquarters for the building of the Rideau Canal, a project carried out between 1826 and 1932 to establish a safe navigable waterway between Lake Ontario and the Ottawa River. The building of the Canal was the crowning achievement in the life of a distinguished British military engineer, Lieutenant-Colonel John By, R.E., who gave his name to the new settlement inhabited mainly by stone masons and discharged soldiers. As time passed, Bytown prospered as a timber centre and was incorporated as a town in 1847. Then, on Dec. 18, 1854, by Act of the Legislature of the Canadas, the name of Bytown was changed to Ottawa and under that name the community was incorporated as a city on Jan. 1, 1855.

The city, situated in an area of great natural beauty and surrounded by waterways, has remained a self-governing municipality and, although throughout the years the Federal Government co-operated with the municipal authorities in the development of a system of driveways and parks, the city expanded without the benefit of a comprehensive plan. However, in 1950 a Master Plan was presented to the Government of Canada, designed to guide the development of the Capital's urban area over the following half-century and to protect the beauty of the surrounding National Capital Region. This Region originally covered 900 sq. miles but was increased in 1959 to 1,800 sq. miles—half in the Province of Ontario and half in the Province of Quebec. Although the successful implementation of the Plan is dependent upon the co-operation of the cities of Ottawa and Hull—which are treated as a physical, social and economic whole—and of about sixty other autonomous municipalities and the two provincial governments involved, the National Capital Plan is not officially recognized by the Governments of Ontario and Quebec, and the City of Ottawa has as yet no municipal plan to govern its growth and development.

The federal agency responsible for the planning of Canada's Capital is the National Capital Commission, created in 1959 to replace the Federal District Commission which, in turn, was the lineal descendant of the Ottawa Improvement Commission. The National Capital Commission, which reports to Parliament through the Minister of Public Works, is composed of twenty members appointed by the Governor in Council and representing each of Canada's ten provinces. It is headed by a chairman and a general manager and has a personnel of about 550, although this number fluctuates because of the seasonal character of a large part of the work involved. Six committees give advice and direction to the Commission: the *Executive Committee* consists of the chairman and vice-chairman of the Commission and three other members appointed by the Commission, one of whom is from the Province of Quebec; the *Land Committee*, composed of several experts in land evaluation, advises the Commission on matters of land purchases and property administration; the *Advisory Committee on Design*, comprising prominent Canadian architects, town planners and landscape architects, gives advice on the external appearance of government buildings, locations, site plans and landscape designs; the *Historical Advisory Committee* advises the Commission on matters of preservation, marking and interpretation of buildings and sites having historical significance within the National Capital Region; the *Information Advisory Committee* studies and considers the publicity and public relations activities of the Commission; and the *Gatineau Park Advisory Committee* looks after matters concerning the 75,000-acre Gatineau Park, wholly owned and administered by the Commission.

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* Prepared in the Information Division, National Capital Commission, Ottawa.

The National Capital Plan, as conceived by the eminent French town planner Jacques Gréber, was dedicated to those who gave their lives for Canada during the Second World War and has since constituted the Commission's planning guide for the Capital of Canada. In accordance with the first proposal of the Master Plan, the principle of "open space" is being applied, a policy beneficial to both residents and visitors. Part of this policy involves the restoration to their natural beauty of the shores of the waterways in and around Ottawa, a program evident in the work of the Commission at Rideau Falls Park opposite the City Hall and in the development of Vincent Massey Park in the heart of the city; the latter is a 125-acre park and playground extension to Hog's Back Park at the foot of Hog's Back Falls. On the Quebec side of the Ottawa River the Commission maintains two parks—the historically interesting Brébeuf Park and Jacques Cartier Park, both on the shores of the river. Driveways and parkways in and around the Capital are also part of the open-space treatment. There are at present 40 miles of wide landscaped roadways in Ottawa and Hull, and 30 miles of right-of-way have been acquired for future expansion. The Commission cares for the landscaping of seven municipal parks, of which Strathcona Park in Sandy Hill district and Rockcliffe Park are the most extensive and attractive. The acquisition of land along both shores of the Ottawa and Rideau Rivers and the exceptionally wide rights-of-way for parkways have given to Ottawa about 4,000 acres of open space.

One of the strong recommendations of the Master Plan is that new government buildings should be dispersed from the heart of the city. This program of decentralization has been under way for some time and excellent examples of planned sites for government structures now exist at Rideau Heights, at Tunney's Pasture and at the Printing Bureau site in Hull. Other areas, such as the large tract of already serviced land at Pinecrest, are awaiting development. The advantages of decentralization are many—planned government building areas away from centre-town offer at least partial solution to the ever-pressing problem of traffic congestion and, from the humanitarian point of view, workers occupy buildings erected on large landscaped grounds with plenty of parking space and are close to main traffic arteries and shopping centres, and often to good housing developments. The grounds of more than 125 government buildings in the National Capital Region are cared for by the Commission, which also gives assistance to municipal projects that enhance the attractiveness of the area, such as the provision of land and landscaping for the 12-mile Queensway being built under a four-way partnership between the Federal Government, the National Capital Commission, the Province of Ontario and the City of Ottawa.

A main proposal of the Master Plan calls for the establishment of a greenbelt around the National Capital, one of the main objectives of which is to restrain the tentacular growth of the city so that family dwelling projects will be built on lands that can be supplied, at reasonable cost, with water and sewer services. There are also the aesthetic considerations in that this belt of green open space and planned building sites will provide the beautified Capital with suitable approaches. The present semi-circular greenbelt on the Ontario side occupies 37,000 acres of land and surrounds, to a depth of about two and one-half miles, the urban zone at an average distance of nine miles from the Peace Tower. The Commission encourages agricultural activity within this area and at the same time reserves within its boundaries certain tracts of land to be occupied by government buildings, public institutions and some types of industrial development such as research and experimentation establishments requiring considerable space to operate. By the end of March 1961, the Commission will have spent approximately $20,000,000 to purchase for the Crown about 25,000 of the planned 37,000 acres. The entire project should be completed by 1963.

A primary task of the Commission is to carry out the railway relocation program strongly advocated in the Master Plan. At the very beginning of his study of Ottawa and Hull, Jacques Gréber discovered that little could be done for the National Capital unless unsightly railway lines and adjoining roundhouses and sheds were removed from the urban areas. The Commission has begun the large-scale program of relocating trackage and yards with the co-operation of the railway companies. The abandoned rights-of-way are destined to become planned roadways which will relieve traffic bottlenecks within the heart of the city; the Queensway, now under construction, runs on a former railway bed. This program is ahead of schedule and is now expected to be complete by 1965. It involves the removal of 35 miles of track, the elimination of 70 railway crossings and the consequent acquisition of 449 acres of land for redevelopment.

The Master Plan also includes the establishment and development of the beautiful and impressive Gatineau Park, a 75,000-acre forest and lake area in the shape of a triangle stretching from its apex in the city of Hull northwestward for 35 miles into the Laurentian Hills. By the end of March 1962, the National Capital Commission will own more than 62,000 acres of the projected area. The parkways through this area now measure about 20 miles and extensions are under construction. Camping and picnic sites are being improved by the installation of drinking fountains, barbecues and outdoor ovens, and well-designed restrooms, and by the addition of fishing and swimming facilities. At Lac Philippe and Lac Lapêche, two of the four big lakes in Gatineau Park, the Commission has developed or is planning large-scale public recreation facilities with easy road access.

In addition to these major development projects, the National Capital Commission, through its Historical Advisory Committee, plans to conserve historic buildings and sites as mementoes of the past. Such sites are carefully studied and their preservation and suitable marking is an important part of the over-all program.

Planning aid to municipalities in the National Capital Region is given in the form of grants in special circumstances and advice on establishing areas of subdivision control, preparation of basic plans and maps, master plans for communities and zoning legislation. This advice is available upon request and the Commission, having no planning powers, must seek to persuade rather than impose its proposals. Its planning staff has served a score of local municipalities in this capacity with varied success, and advice to many of them is continuing.

Estimated expenditures on Commission projects for the year ending Mar. 31, 1962 total $17,810,255 which includes $2,557,470 for administration, operation and maintenance, $4,152,785 for construction, and $11,100,000 for property acquisition.

Section 3.—Wildlife Resources and Conservation

A series of special articles relating to the wildlife resources of Canada has been carried in previous editions of the Year Book. Articles on Migratory Bird Protection in Canada, Game Fish in Canada's National Parks, The Barren-Ground Caribou, Migratory Bird Legislation, Scientific Management of Game Fish in Canada's National Parks, and The Musk-ox were carried in the 1951, 1952-53, 1954, 1955, 1956 and 1957-58 editions, respectively. A short article on the fur industry appears in the 1959 edition at pp. 603-604.

The Canadian Wildlife Service.*—The Canadian Wildlife Service deals with most wildlife problems coming within the jurisdiction of the Federal Government. The Service was organized in 1947 to meet the growing need for scientific research in wildlife management and is a division of the National Parks Branch, Department of Northern Affairs and National Resources. Its functions include the administration of the Migratory Birds Convention Act in conjunction with the Royal Canadian Mounted Police and in co-operation with the provincial game authorities. It conducts scientific research into wildlife problems in the Northwest Territories, Yukon Territory, and the National Parks of Canada, advises the administrative agencies concerned on wildlife management and co-operates in the application of such advice. It provides co-ordination and advice in connection with the administration of the Game Export Act in the provinces, deals with national and international problems relating to Canada's wildlife resources, and co-operates with other agencies having similar interests and problems in Canada and elsewhere.

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* Prepared by the Canadian Wildlife Service, Department of Northern Affairs and National Resources, Ottawa.

The Migratory Birds Convention Act was passed in 1917 to give effect to the Migratory Birds Treaty signed at Washington in 1916. It provides a measure of protection for numerous species of birds that migrate between the two countries. The Canadian Wildlife Service is the federal agency responsible for administration of the Act and for the annual revision of the Migratory Bird Regulations, which govern such matters as open seasons and other waterfowl hunting details, taking and possession of migratory birds for scientific or propagating purposes, eiderdown collecting, etc. The Royal Canadian Mounted Police is responsible for enforcing the Act and Regulations. In both administration and enforcement, provincial authorities co-operate with the Canadian Wildlife Service.

There are 98 migratory bird sanctuaries in Canada with a total area of more than 6,000 sq. miles. A sanctuary may be established on the initiative of the Department or of a provincial or municipal government, or on petition by a private person or organization. Bird banding provides valuable information on the migration of birds and their natural history and is especially useful in waterfowl management. Serially numbered bands supplied by the United States Bureau of Sport Fisheries and Wildlife are used in Canada as well as in the United States.

Investigations of barren-ground caribou in the Northwest Territories and Yukon Territory have continued since 1948. The herds that migrate into parts of the Prairie Provinces adjacent to the Territories have been the object of co-operative studies by the federal and provincial governments. These studies have designated causes for the disastrous decline in caribou numbers, with human utilization heading the list of mortality factors. Studies of fire damage to caribou winter range, and investigations of the impact of predatory animals on caribou numbers have been started recently. More conservation education is essential as is the development of more effective game law enforcement while recognizing fully the problems and needs of the people of the area.

Other recent and current projects of the Service include long-term studies of the muskrat of the Mackenzie Delta, beaver in the Mackenzie District, white fox in the Eastern Arctic and musk-oxen on the Arctic islands. The large herds of bison in Wood Buffalo National Park have been studied to determine the effects of disease on their health and growth. Biologists of the Service make detailed studies of birds and mammals in the National Parks and advise the National Parks Service, on the basis of the scientific information obtained, concerning the management of these national resources. Damage to cereal crops by wild ducks and cranes has received intensive study. Murres, sea birds of importance to many inhabitants of Newfoundland, have been investigated to determine the effects of human activity on their numbers. Much time has been devoted to other species greatly reduced in number or in danger of extinction such as Ross's geese, trumpeter swans and whooping cranes.

The present research staff includes 39 university-trained wildlife biologists stationed at various centres throughout Canada. Ornithologists are located at Vancouver, Edmonton, Saskatoon, Winnipeg, Ottawa, Maple, Ont., Quebec City, Sackville, N.B., and St. John's, Nfld. Mammalogists are stationed in the Northwest Territories at Yellowknife, Fort Smith and Aklavik, and at Edmonton and Ottawa. Two limnologists are located at

Edmonton and a range specialist and a pathologist at Edmonton and Ottawa, respectively. A number of university graduates and undergraduates are engaged annually to assist in summer field work. The Ottawa headquarters includes an administrative staff of about 30 in addition to supervisory research officers. About 25 part-time migratory bird wardens and sanctuary caretakers are employed.

PART IV.—CLIMATE AND TIME ZONES

Section 1.—Climate*

Just as there are great differences in the weather throughout Canada at any given instant, there are also many climates. These climates are not unique but are similar to those in Europe and Asia extending from the Arctic down to the mid-northern hemispheric latitudes. Because Canada is situated in the northern half of the hemisphere, most of the country loses more heat annually than it receives from the sun. The general atmospheric circulation compensates for this and at the same time produces a general movement of air from west to east. Migrant low pressure areas move across the country in this "westerly zone", producing storms and bad weather. In intervals between storms there prevails the fair weather associated with high pressure areas.

Although the movement of migrant high and low pressure systems within the zone of the westerlies is the most significant climatic control over Canada, the physical geography of North America contributes greatly to the climate. On the West Coast, the western Cordillera limits mild air from the Pacific to a narrow band along the Coast, while the prairies to the east of the mountains are dry and have extreme temperatures because they are shielded from the Pacific Ocean and are in the interior of a large land mass. In addition, the prairies are part of a wide north-south corridor open to rapid air flow from either north or south which often brings sudden and drastic weather changes to this interior area. On the other hand, the large water surfaces of Eastern Canada produce a considerable modification to the climate. In southwestern Ontario winters are milder with more snow, and in summer the cooling effect of the lakes is well illustrated by the number of resorts along their shores. On the East Coast, the Atlantic Ocean has considerable effect on the immediate coastal area where temperatures are modified and conditions made more humid when the winds blow inland from the ocean. The following paragraphs describe the climate of Canada by region.

The *Arctic* climatic region takes in the Arctic islands and that part of the Arctic Coast north of the tree line. This line corresponds in general to the position of the 50°F. isotherm in the warmest month of summer. In the Arctic there is no summer as that season is known in southern Canada, since July temperatures average lower than 50°F. Winters are long and severe with January temperatures averaging in the neighbourhood of −20°F. Along the coastal areas of the Arctic islands, temperature extremes over the year may vary from about 65°F. in summer to −65°F. in winter. Snowfall is relatively light but snow on the ground drifts and blows to an extent unknown in southern Canada.

The *Northern* climatic area extends in a broad band from the Yukon Territory in the west to Labrador in the east and from the tree line southward to the more settled portions of southern Canada. Thus, this region includes both the lightly treed barren lands in the north and the heavily timbered Boreal Forest Region in the south. Average temperatures in January are in the neighbourhood of −10°F. and in July range from 50°F. to 60°F. Rainfall and snowfall (especially snowfall) are abundant in the eastern portions but deficient in the northwestern section.

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* Prepared by the Meteorological Branch of the Department of Transport, Toronto. A comprehensive study on The Climate of Canada, also prepared by the Meteorological Branch, was carried in the 1959 Year Book, pp. 23-51. Supplementing that textual material, detailed tabulations of climatic factors for 45 individual meteorological stations across the country were carried in the 1960 Year Book, pp. 33-77. A reprint is available from the above source giving the complete textual and tabular data.

The *Pacific* climatic region embraces the islands and a narrow coastal belt of British Columbia, nowhere extending more than 100 miles, and frequently only a few miles, inland. This is the only portion of Canada where January average temperatures are above 32°F. Temperatures rarely drop below zero in winter or rise above 90°F. in summer and the average temperature in July is between 55°F. and 60°F. This is the area of heaviest rainfall in Canada, annual averages of more than 80 inches being common along the coast. There are, however, rain shadow areas in the lee of the mountains where the annual precipitation is less than 30 inches.

The most complex climatic region of Canada is the *Cordillera* which extends in a northwest-south belt through British Columbia and the Yukon Territory. In general, precipitation decreases eastward from the coast and, in contrast, temperature ranges decrease westward from the interior of the Continent. In this region, diurnal temperature variations are greater than anywhere else in Canada and, as a rule, altitude is more a climatic determinant than latitude.

The *Prairie* climatic region of interior Canada takes in most of the settled agricultural land of Manitoba, Saskatchewan and Alberta. Precipitation averages from 12 to 20 inches, with an early-summer maximum. July temperatures average in the neighbourhood of 65°F., although there have been extremes recorded as high as 115°F.; January temperatures average about 5°F., with observed extremes of −50°F. and −60°F. The Prairie region is well known for two wintertime weather phenomena—the blizzard and the chinook. Bitterly cold temperatures with high winds and driving snow combine to produce the blizzard, while the chinook is a warm air invasion, usually in Alberta, bringing temperature increases of 40°F. to 50°F. within a few hours.

The sixth general climatic region, called the *Southeastern* region, takes in southern Ontario, southern Quebec and the four Atlantic Provinces. Precipitation in this area is usually ample and ranges from 30 inches in northern Ontario to 50 inches in coastal Nova Scotia and Newfoundland. Snowfall is also abundant in winter, there being little seasonal variation in precipitation. July temperatures average between 65°F. and 70°F. and January temperatures from 10°F. to 25°F. Climatic conditions in general are modified in southwestern Ontario by the Great Lakes and those along the coastal areas by the Gulf of St. Lawrence and the Atlantic Ocean. In southern Ontario high sensible humidity or sultry conditions are felt more often than anywhere else in Canada but these spells usually last only a few days at a time.

The following table gives temperature and precipitation data for typical stations in the various regions of Canada. Temperatures in this table refer to observations taken in a thermometer shelter which has been placed in a representative location with the thermometer bulbs four feet above the surface of the ground. Mean January and July temperature data are based on records over the 30-year period from 1921 to 1950 except for far northern stations where the available period of record is shorter. After an average temperature is obtained for each day in January over a 30-year period, the mean January temperature may be arrived at by striking a mean of these 930 daily values. The mean July temperatures may be obtained in a similar manner. The highest and lowest temperatures on record refer to the absolute extremes for the entire period of record at each station. Average dates are shown for the last occurrence in spring of a temperature of 32°F. or lower and for the first occurrence in autumn of freezing temperatures at the four-foot level in the thermometer shelter.

The official Canadian rain gauge is a small cylinder in which the rain is caught and then measured to one-hundredth of an inch with a simple measuring device. Freshly fallen snow is measured as it lies on the ground and recorded to the tenth of an inch. Total precipitation values as shown in the table are the sum of the total rainfall and one-tenth of the total snowfall. This assumes a specific gravity of 0.1 for freshly fallen snow. For the purposes of this table, a day with precipitation is one on which at least one-hundredth of an inch of rain or one-tenth of an inch of snow has fallen.

Temperature and Precipitation Data for Typical Stations in the Various Districts

District and Station	Temperatures (Fahrenheit)						Precipitation		
	Mean Jan.	Mean July	Highest on Record	Lowest on Record	Av. Dates of Freezing Temperatures (32°F. or Lower)		Total (All Forms)[1]	Snowfall	Av. Number of Days (All Forms)
					Last in Spring	First in Autumn			
							in.	in.	
Newfoundland—									
Island of Newfoundland—									
Belle Isle	11.0	48.6	73	−31	June 19	Sept. 24	33.19	98.8	152
Gander	18.6	61.6	96	−15	June 1	Oct. 3	39.50	119.2	194
St. Andrew's	25.2	59.9	81	−11	June 11	Sept. 28	42.47	54.8	156
St. John's	24.0	60.0	93	−21	June 2	Oct. 10	53.09	114.1	201
Labrador—									
Cartwright	5.8	55.5	97	−36	June 26	Sept. 9	40.31	200.6	165
Goose	0.8	60.5	100	−38	June 10	Sept. 14	28.66	140.9	164
Nain	−2.5	50.4	91	−37	July 3	Aug. 12	28.69	128.2	121
Maritime Provinces—									
Prince Edward Island—									
Charlottetown	18.8	66.6	98	−27	May 16	Oct. 14	43.13	112.7	156
Nova Scotia—									
Annapolis Royal	24.4	65.3	91	−13	May 20	Oct. 6	41.35	68.0	144
Halifax	24.4	65.0	99	−21	May 13	Oct. 12	54.26	64.1	159
Sydney	22.7	65.0	98	−25	May 29	Oct. 13	50.61	96.6	169
Yarmouth	27.0	61.6	86	−12	May 7	Oct. 14	47.08	83.1	151
New Brunswick—									
Chatham	12.7	66.5	102	−43	May 21	Sept. 28	36.71	88.5	152
Grand Falls	8.7	64.7	98	−46	May 28	Sept. 20	38.42	106.3	101
Moncton	16.1	65.8	99	−33	June 1	Sept. 14	40.97	108.4	130
Saint John	19.8	61.8	93	−21	May 4	Oct. 16	47.39	80.0	170
Quebec—									
Northern—									
Fort Chimo	−12.9	52.6	90	−51	June 25	Aug. 14	16.37	68.8	157
Knob Lake	−11.9	55.1	88	−59	June 21	Aug. 30	27.55	128.6	193
Nitchequon	−10.6	56.5	90	−57	June 14	Sept. 13	30.88	116.3	193
Port Harrison	−14.8	46.8	86	−57	July 5	Aug. 20	14.64	73.3	134
Southern—									
Bagotville	2.9	63.8	96	−46	June 1	Sept. 16	38.72	130.3	160
Father Point	9.7	58.1	90	−32	May 22	Sept. 26	33.56	108.0	147
Montreal	15.4	70.4	97	−29	Apr. 28	Oct. 17	41.80	100.8	160
Quebec	12.0	67.6	97	−34	May 11	Oct. 5	44.76	123.7	171
Sept Iles	3.2	59.2	90	−46	June 4	Sept. 10	41.94	165.5	143
Sherbrooke	14.0	67.6	98	−42	May 18	Sept. 23	38.93	97.2	176
Ontario—									
Northern—									
Kapuskasing	−1.3	62.8	101	−53	June 14	Sept. 5	27.99	95.8	142
Port Arthur-Fort William	7.6	63.4	104	−42	June 4	Sept. 7	31.62	93.4	137
Sioux Lookout	−1.3	65.0	103	−51	June 1	Sept. 15	25.96	74.5	157
Trout Lake	−10.8	60.5	95	−54	June 16	Sept. 15	24.74	85.1	146
Southern—									
London	22.5	69.6	106	−27	May 16	Oct. 1	38.24	77.0	160
Ottawa	12.0	68.6	102	−38	May 11	Sept. 29	34.89	80.5	145
Parry Sound	16.2	67.8	100	−39	May 15	Oct. 2	37.87	118.2	162
Toronto	24.5	70.8	105	−26	May 3	Oct. 15	30.93	54.6	143
Windsor	25.6	72.5	101	−27	Apr. 29	Oct. 15	33.43	35.8	139
Prairie Provinces—									
Manitoba—									
Churchill	−17.3	54.7	96	−57	June 28	Aug. 30	15.01	55.2	102
The Pas	−6.2	64.9	100	−54	May 30	Sept. 9	16.98	53.2	102
Winnipeg	0.6	68.4	108	−54	May 27	Sept. 15	19.72	49.4	119

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[1] Total rainfall and one-tenth of the total snowfall.

Temperature and Precipitation Data for Typical Stations in the Various Districts—concluded

District and Station	TEMPERATURES (Fahrenheit)						PRECIPITATION		
	Mean Jan.	Mean July	Highest on Record	Lowest on Record	Av. Dates of Freezing Temperatures (32°F. or Lower)		Total (All Forms)[1]	Snowfall	Av. Number of Days (All Forms)
					Last in Spring	First in Autumn			
							in.	in.	
Prairie Provinces—concl.									
Saskatchewan—									
Regina	2.3	66.6	110	−56	June 5	Sept. 6	15.09	40.1	113
Saskatoon	0.8	66.4	104	−55	May 24	Sept. 13	14.40	36.1	104
Swift Current	9.8	67.2	107	−54	May 27	Sept. 10	14.89	40.2	112
Alberta—									
Beaverlodge	9.7	60.2	98	−54	May 30	Sept. 1	17.32	68.2	127
Calgary	15.8	62.4	97	−49	June 3	Sept. 3	17.47	57.0	105
Edmonton	7.7	62.9	99	−57	May 29	Sept. 6	17.63	52.9	126
Medicine Hat	13.7	70.2	108	−51	May 15	Sept. 18	13.55	41.6	98
British Columbia—									
Pacific Coast and Coastal Valleys—									
Estevan Point	40.4	56.3	80	7	Apr. 3	Nov. 12	107.66	10.2	203
Langara	37.6	54.8	78	6	Apr. 2	Dec. 2	67.79	20.8	255
Prince Rupert	35.7	56.2	88	−6	Apr. 19	Nov. 3	94.00	32.1	229
Vancouver	37.6	64.4	92	2	Apr. 1	Nov. 5	56.83	24.5	179
Victoria	39.2	60.0	95	−2	Feb. 28	Dec. 7	26.18	10.1	149
Southern Interior—									
Glacier	13.6	57.9	98	−32	June 10	Sept. 8	52.24	342.5	192
Invermere	13.3	63.1	99	−43	May 27	Sept. 12	11.52	30.2	92
Kamloops	22.3	70.4	107	−37	Apr. 25	Oct. 8	10.14	29.4	83
Penticton	26.7	68.7	105	−16	May 7	Oct. 3	11.50	25.4	109
Princeton	17.1	63.1	107	−49	June 11	Sept. 4	13.30	49.2	105
Central Interior—									
Barkerville	16.0	54.5	96	−52	June 25	Aug. 16	43.83	220.4	187
McBride	17.2	59.2	100	−50	June 18	Aug. 23	19.73	74.2	125
Prince George	14.6	59.6	102	−58	June 17	Aug. 24	22.16	66.5	166
Smithers	12.8	58.0	92	−47	June 22	Aug. 11	19.09	67.1	147
Northern Interior—									
Atlin	7.2	53.8	87	−54	June 11	Sept. 4	11.01	46.4	70
Dease Lake	−2.9	55.0	93	−60	July 2	Aug. 13	15.29	66.7	144
Fort Nelson	−7.3	61.7	98	−61	May 24	Sept. 2	16.37	66.8	115
Fort St. John	3.8	60.8	92	−53	May 25	Sept. 1	14.94	62.5	122
Smith River	−11.4	57.0	92	−74	July 2	Aug. 11	18.14	75.4	151
Yukon Territory—									
Dawson	−16.0	59.8	95	−73	June 4	Aug. 21	12.73	52.5	119
Snag	−18.9	57.3	89	−81	June 17	Aug. 7	13.82	52.8	109
Watson Lake	−7.2	58.6	93	−74	June 1	Aug. 25	16.75	77.0	141
Whitehorse	5.2	56.2	91	−62	June 10	Aug. 27	10.67	43.7	92
Northwest Territories—									
Mackenzie Basin—									
Fort Good Hope	−21.0	59.8	95	−79	June 14	Aug. 6	12.18	57.3	110
Fort Simpson	−15.1	62.4	97	−69	June 4	Aug. 28	12.13	45.2	97
Hay River	−11.6	59.8	96	−62	June 11	Sept. 7	12.02	46.8	99
Barrens—									
Baker Lake	−30.0	50.5	82	−58	June 30	Aug. 25	6.74	21.8	71
Chesterfield	−25.6	48.0	86	−60	June 30	Sept. 4	11.12	51.5	96
Coppermine	−19.0	49.0	87	−58	June 28	Aug. 18	10.87	55.5	105
Arctic Archipelago—									
Clyde River	−16.7	40.4	71	−47	[2]	[2]	10.04	69.4	89
Eureka	−36.3	41.9	67	−63	June 22	Aug. 2	2.49	13.9	50
Frobisher Bay	−15.8	45.7	76	−49	June 24	Aug. 27	13.53	73.1	104
Mould Bay	−28.9	38.0	59	−63	[2]	[2]	2.98	19.1	74
Resolute	−28.2	39.7	60	−61	[2]	[2]	5.28	28.0	93

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[1] Total rainfall and one-tenth of the total snowfall.

[2] No appreciable period free from frost.

Section 2.—Meteorological Observing Stations in Canada*

In 1960, official meteorological observations were taken and recorded at some 1,903 weather reporting stations in Canada. There are several different classes of stations, ranging from the first-order reporting stations at airports where hourly observations of all aspects of the weather are recorded, to the co-operative precipitation observing stations where a volunteer observer makes daily observations of rainfall and snowfall.

The official recording of weather observations in Canada began early in 1840. Although there were some scattered weather records prior to that date, it was at the Toronto Observatory, established by the British Government, that the first scientifically precise Canadian weather observations were recorded. Several additional observing stations were established in the 1860's after control of meteorological work had passed into local government hands and a national meteorological service was organized in 1871. By 1876 there were more than 100 stations, 15 of them reporting daily by telegraph to Toronto for forecasting purposes.

Since then, the number of meteorological observing stations has grown steadily. As the mid-west opened up around the turn of the century, observing stations were established in that area, and during the past three decades in the sub-Arctic and Arctic regions. At the same time, the coverage has improved in the older settled portions of southeastern Canada. While there are vast areas of Canada where the weather stations are several hundred miles apart, most of the settled parts of the country are represented by first-order hourly reporting stations every 100 miles or so, and by co-operative climatological observing stations at least every 25 miles.

Of the 1,903 weather reporting stations across Canada, about 286 are classified as first-order synoptic stations. At most of these stations complete weather observations are made every six hours and at a large percentage of them only slightly less complete observations for aviation forecasts are made every hour. These weather data, including information on temperature, precipitation, pressure, wind, humidity, cloud and visibility, are sent first by radio and teletype to the different weather offices across the Continent to be used for weather forecasting purposes, and then at each month-end the manuscript reports are dispatched by mail to Meteorological Headquarters for use in compiling climatic statistics. At some 90 of these observing stations, personnel of the Telecommunications Branch of the Department of Transport take weather observations as part of their scheduled duties, and 35 stations are operated in a similar manner by the different Armed Services; 70 stations are operated by Meteorological Branch personnel and the remainder are operated under contract, mainly by various transportation and communications companies.

Twice daily at 34 locations throughout the country, complete upper air observations are made from the surface to altitudes upwards to 100,000 feet. Pressure, temperature and humidity measurements are determined by radiosonde instruments carried aloft by balloons and the information reported by radio to the ground receiving station; winds are determined by observing the drift of the balloon by means of radar or radio direction finding ground equipment. There are also 38 other locations where the winds in the lower layers of the atmosphere are determined by observing free balloon drift by means of a theodolite or by radar. As in the case of the first-order synoptic reporting stations, these upper air weather observations are made available immediately to forecast offices for weather forecasting purposes, and the manuscript reports are collected at Meteorological Branch Headquarters for compilation of climatic statistics.

About 1,040 weather observing stations in Canada are classified as climatological stations where the observers record temperature extremes and precipitation once or twice daily and send in monthly data sheets. Most of these observers serve on a voluntary basis and willingly spend several hours a month on their hobby. They come from all walks of life—farmers, business men, clergymen, retired people, etc. In addition, many governmental and industrial organizations such as agricultural experimental farms and power companies have incorporated brief climatological duties into the general work of some of their employees. These climatological stations have contributed much useful information on temperature and precipitation for publication by the Meteorological Branch.

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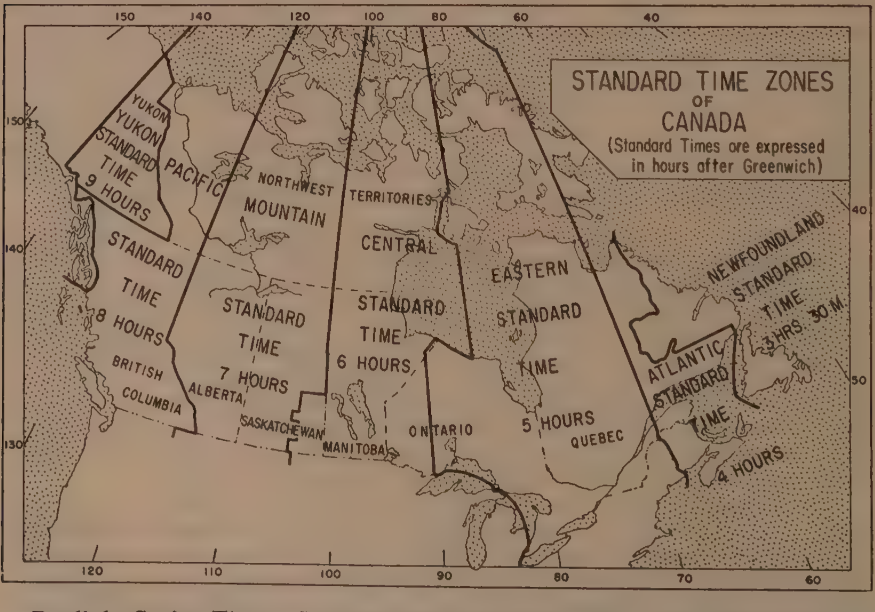
* Prepared by the Meteorological Branch, Department of Transport, Toronto.

There are about 560 stations classified as precipitation stations where rainfall and snowfall only are observed and recorded. Since precipitation varies more rapidly than temperature over short distances, a dense network of these stations is required, especially in large urban areas. Finally, there are about 15 miscellaneous stations where observations of wind, sunshine and temperature are taken for special purposes. In all, the total number of weather stations in Canada has been growing at a rate of more than 50 a year for the past decade and thus a steadily increasing climatic intelligence is assisting Canadians in all economic pursuits.

Section 3.—Standard Time and Time Zones

Standard time, which was adopted at a World Conference held at Washington, D.C., in 1884, sets the number of time zones in the world at 24, each zone extending over one twenty-fourth of the surface of the earth and including all the territory between two meridians 15° longitude apart. The basis of world time is Greenwich time and all other time zones are a definite number of hours behind Greenwich.

Canada has seven time zones, the most easterly being Newfoundland standard time, three hours and thirty minutes behind Greenwich time. In the west, Pacific standard time, used throughout British Columbia and part of the Northwest Territories, is eight hours behind Greenwich, and Yukon standard time, used throughout the Yukon Territory, is nine hours behind Greenwich. Some municipalities adopt the time used by the local railways which, in certain cases, differs from the standard. There are also villages that adopt such time as seems best to suit their convenience but in general the legal boundaries of the different time zones are actually in use.


STANDARD TIME ZONES OF CANADA
(Standard Times are expressed in hours after Greenwich)
YUKON
YUKON STANDARD TIME 9 HOURS
PACIFIC STANDARD TIME 8 HOURS
BRITISH COLUMBIA
NORTHWEST TERRITORIES
MOUNTAIN STANDARD TIME 7 HOURS
ALBERTA
SASKATCHEWAN
MANITOBA
CENTRAL STANDARD TIME 6 HOURS
ONTARIO
EASTERN STANDARD TIME 5 HOURS
QUEBEC
ATLANTIC STANDARD TIME 4 HOURS
NEWFOUNDLAND STANDARD TIME 3 HRS. 30 M.
150
140
120
100
80
60
40
130
110
90
70
50

Daylight Saving Time.—For some years before World War I there was active propaganda, particularly in the cities, for the use during the summer months of an earlier time usually referred to as 'daylight saving time', one hour ahead of standard time. It was considered from the economic as well as from the health point of view that people in industrial towns and cities would gain by having longer periods of sunlight at their disposal for recreation. Canada adopted daylight saving time in 1918 but the Canadian Act lapsed at the end of that year. Since that date, however, most cities and towns have adopted daylight saving for varying periods in the summer months.

Legal Authority for the Time Zones.—Most of the regulations made in Canada concerning standard time have been passed by the provincial legislatures and the Northwest Territories Council. Legislation, besides determining the boundaries of zones, regulates such matters as the times of coming into effect or expiration of Acts, ordinances, contracts and agreements, times of opening and closing registration offices, law courts, post offices and other public offices, times of open or close seasons for hunting and fishing, and times of opening and closing business houses and places of amusement.

PART V.—GEOPHYSICS AND ASTRONOMY

Section 1.—Geophysics*

The study of the earth is divided between two branches of science—geology and geophysics. Geology is concerned with the observation and description of those rocks which form the surface of the earth, leaving to geophysics all investigations of the atmosphere and near-by space, the oceans, fresh waters, snow and ice, the earth's interior, its magnetic and gravitational fields and several studies of rocks which involve physical measurements, including the direction of their remanent magnetism, and measurements of the age of radioactive minerals.

The word geophysics first appeared at the end of the nineteenth century, but its development goes back to the time when primitive men first began to study the changes of the weather and the seas. In the second century A.D. the Chinese invented the magnetic compass and the first instruments to record earthquakes. Since 1920 its scope and applications have increased very rapidly and the science has received world-wide publicity as a result of the International Geophysical Year, 1957-58, in which Canada participated along with 66 other countries.

The chief branches of geophysics that are internationally recognized are seismology and the study of the earth's interior, meteorology, geomagnetism and aeronomy, physical oceanography, hydrology and volcanology. Lesser divisions include geochronology and tectonophysics.

In industry, petroleum and mining companies use electrical, gravitational, magnetic, radioactive and seismic methods of prospecting to direct drilling for deposits. Engineers use the same methods to investigate construction sites.

In the Federal Government, the Dominion Observatory, the Geological Survey of Canada and several other branches of the Department of Mines and Technical Surveys carry out extensive programs of geophysical investigation. So does the Meteorological Service of the Department of Transport. Geophysical work by provincial governments has chiefly consisted of the preparation of aeromagnetic maps to assist prospecting.

In Canadian universities geophysics has been taught at McGill and Toronto for the past 35 years, and since 1945 most of the other larger universities have started to give courses. There are Institutes of Oceanography at British Columbia and Dalhousie. Graduate courses in meteorology are given at Toronto and McGill. There are two geophysical institutes at the University of Toronto. Canada has been a member of the International Union of Geodesy and Geophysics since its inception in 1919.

Further information on this subject may be secured from the Secretary of the National Committee for Canada (NRC Associate Committee on Geodesy and Geophysics), National Research Council, Ottawa.

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* Prepared by Dr. J. T. Wilson, Physics Department, University of Toronto.

Section 2.—Astronomy

The modern era of astronomy in Canada may be said to have begun in 1905 with the completion of the Dominion Observatory at Ottawa, the national observatory of Canada. Prior to that time, an astronomical observatory established in 1851 at Fredericton, N.B., was used for a short time to determine the longitude of that centre and for general astronomical purposes; it has been rehabilitated as a historic monument. Other small observatories were established, one at Quebec City in 1854 and one at Kingston in 1875. Astronomical instruments were to be associated with the Magnetic Observatory built by the British Government at Toronto in 1839 but there is no record of their being set up until 1881. A small observatory established at McGill University in 1879 was used for many years for time observations.

Today, an increasing number of universities and other scientific organizations are devoting a substantial part of their efforts to the study of astronomy and astrophysics. The Dominion Observatory at Ottawa which, with its sister institutions, is administered by the Department of Mines and Technical Surveys, specializes in the astronomy of position, solar physics, meteoric astronomy and various branches of Geophysical work. This Observatory also maintains a subsidiary (the Dominion Radio Astrophysical Observatory) near Penticton, B.C., for the study of Radio Astronomy. Also associated in the same group is the Dominion Astrophysical Observatory in Victoria, B.C., which devotes its efforts to the motions and physical characteristics of the stars and of inter-stellar material. Other Federal Government institutions carrying out meteoric and radio astronomy, including a study of the upper atmosphere by essentially astronomical methods, are the National Research Council and the Defence Research Board.

The David Dunlap Observatory of the University of Toronto carries on an active program of astrophysical research as well as the teaching of astronomy. It performs not only the functions of a privately financed and administered research institution, but is also the nucleus of the Department of Astronomy of the University of Toronto. The Physics Department of Queen's University in Kingston, which devotes considerable effort to the teaching of astronomy, has recently installed a new optical telescope and has for some time been carrying on advanced work in the science of radio astronomy. The University of Western Ontario maintains a small but active Department of Astronomy and several other Canadian universities give some instruction in astronomical science.

CHAPTER II.—CONSTITUTION AND GOVERNMENT

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—CONSTITUTION OF CANADA

The Canadian federal state, which today comprises ten provinces and two vast northern territories, had its beginning ninety-four years ago in the enactment (Mar. 29, 1867) by the Parliament of the United Kingdom of the British North America Act, 1867. Fashioned largely out of the Seventy-two Resolutions drafted at Quebec (1864) by the Fathers of Confederation, the British North America Act, 1867 provided for the federal union of the three British North American provinces (Canada, New Brunswick and Nova Scotia) in one Dominion under the name of "Canada".

While the new nation that came into being on July 1, 1867 was a federation comprised of four provinces, namely, Ontario, Quebec, New Brunswick and Nova Scotia, Sect. 146 of the Act provided for the admission into the Union of the Crown colonies of Prince Edward Island and Newfoundland on the Atlantic and the united (1866) island and mainland colony of British Columbia on the Pacific, and also of the vast expanse of Hudson's Bay Company territory in the North West known as "Rupert's Land and the North-Western Territory". Following the negotiation of an agreement on terms comprising the Company's surrender of its authority and territories to the Crown (which was to transfer them at once to Canada) and the retention of one-twentieth of the land of the fertile belt (the southern territories) with designated blocks of land around its trading posts and a Canadian cash payment of £300,000, the new nation of Canada was ready to expand westward with unmatched momentum across the Continent to the Pacific.

1.—Provinces and Territories of Canada, Dates of Admission to Confederation, Legislative Processes by which Admission was Effected, Present Area and Seat of Government

Province, Territory or District	Date of Admission or Creation	Legislative Process	Present Area (sq. miles)	Seat of Provincial or Territorial Government
Ontario[1]	July 1, 1867	Act of Imperial Parliament—The British North America Act, 1867 (U.K. Stat. 1867, c. 3) and Imperial Order in Council, May 22, 1867.	412,582	Toronto
Quebec[2]	July 1, 1867		594,860	Quebec
Nova Scotia	July 1, 1867		21,425	Halifax
New Brunswick	July 1, 1867		28,354	Fredericton
Manitoba[3]	July 15, 1870	Manitoba Act, 1870 (SC 1870, c. 3) and Imperial Order in Council, June 23, 1870.	251,000	Winnipeg
British Columbia	July 20, 1871	Imperial Order in Council, May 16, 1871	366,255	Victoria
Prince Edward Island	July 1, 1873	Imperial Order in Council, June 26, 1873	2,184	Charlottetown
Saskatchewan[4]	Sept. 1, 1905	Saskatchewan Act, 1905 (SC 1905, c. 42)	251,700	Regina
Alberta[4]	Sept. 1, 1905	Alberta Act, 1905 (SC 1905, c. 3)	255,285	Edmonton
Newfoundland	Mar. 31, 1949	The British North America Act, 1949 (U.K. Stat. 1949, c. 22)	156,185	St. John's
Northwest Territories[5]	July 15, 1870	Act of Imperial Parliament—Rupert's Land Act, 1868 (U.K. Stat. 1868, c. 105), and Imperial Order in Council, June 23, 1870	1,304,903	Ottawa[7]
Mackenzie[6]	Jan. 1, 1920	Order in Council, Mar. 16, 1918	*527,490*	
Keewatin[6]	Jan. 1, 1920		*228,160*	
Franklin[6]	Jan. 1, 1920		*549,253*	
Yukon Territory[8]	June 13, 1898	Yukon Territory Act, 1898 (SC 1898, c. 6)	207,076	Whitehorse
		Canada	**3,851,809**	

[1] The area of Ontario was extended by the Ontario Boundaries Extension Act, 1912 (SC 1912, c. 40).

[2] Extended by Quebec Boundaries Extension Act, 1912 (SC 1912, c. 45) and diminished Mar. 1, 1927 in consequence of the Award of the Judicial Committee of the British Privy Council whereby approximately 112,000 sq. miles of territory (formerly considered as part of Quebec) was assigned to Newfoundland.

[3] Extended by the Extension of Boundaries Act of Manitoba, 1881 and the Manitoba Boundaries Extension Act, 1912 (SC 1912, c. 32).

[4] Saskatchewan and Alberta created as provinces in 1905 from the area formerly comprised in the provisional districts of Assiniboia, Athabaska, Alberta and Saskatchewan established May 17, 1882 by minute of Canadian Privy Council concurred in by Dominion Parliament and Order in Council, Oct. 2, 1895.

[5] By an Imperial Order in Council passed on June 23, 1870 pursuant to the Rupert's Land Act, 1868 (U.K. Stat. 1868, c. 105), the former territories of the Hudson's Bay Company known as Rupert's Land and the North-Western Territory were transferred to Canada effective July 15, 1870. These territories were designated as the North-West Territories by the Act of SC 1869, c. 3 and as the Northwest Territories by RSC 1906, c. 62. By Imperial Order in Council of July 31, 1880 (effective Sept. 1, 1880), all British territories and possessions in North America not already included within Canada and all islands adjacent thereto (with the exception of the Colony of Newfoundland and its dependencies) were annexed to Canada and these additional territories were formally included in the North-West Territories by SC 1905, c. 27. The Province of Manitoba was formed out of a portion of the territories by the Manitoba Act, 1870 (SC 1870, c. 3) and a further portion was added to Manitoba in 1881 by SC 1881, c. 14. The Provinces of Alberta and Saskatchewan were formed out of portions of the territories in 1905 and in 1912 other portions were added to Manitoba, Ontario and Quebec.

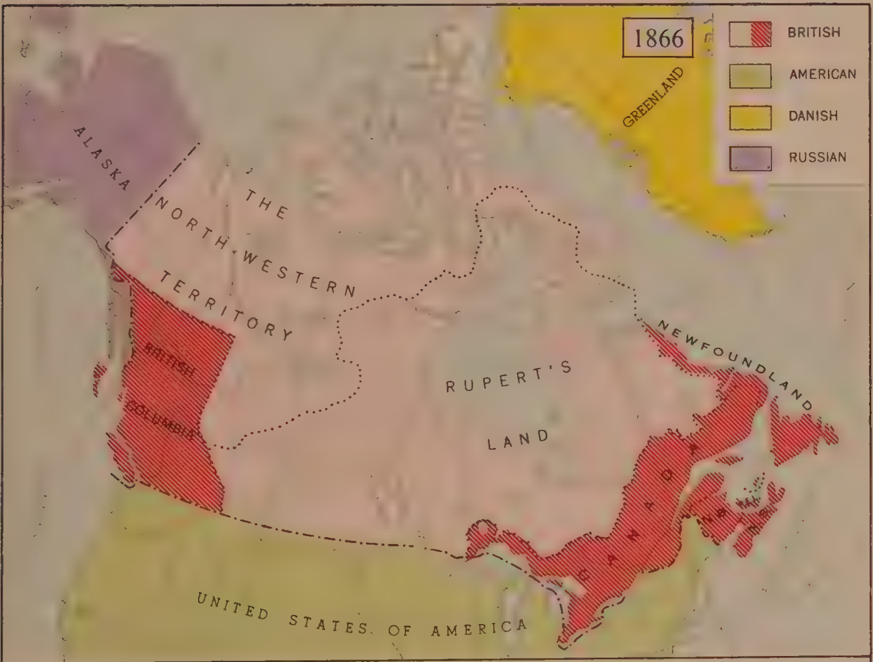
[6] By SC 1876, c. 21, a separate district to be known as the District of Keewatin was established and provision was made for the local government thereof. The Act was expressed to come into force by proclamation. It provided that portions of the District might be re-annexed to the North-West Territories by proclamation; in 1886 a portion of the District of Keewatin was re-annexed and in 1905 the entire Keewatin District was re-annexed. The Act of 1876 was never proclaimed. By Order in Council of May 8, 1882 the provisional districts of Assiniboia, Saskatchewan, Alberta and Athabaska were created for the convenience of settlers and for postal purposes. By Order in Council of Oct. 2, 1895 the further provisional districts of Ungava, Franklin, Mackenzie and Yukon were created. The boundaries of these provisional districts were re-defined by Order in Council of Dec. 18, 1897. Subsequently the Yukon Territory was formed, the Provinces of Alberta and Saskatchewan were created and other portions of the territories were annexed to Quebec, Ontario and Manitoba. By Order in Council dated Mar. 16, 1918 (effective Jan. 1, 1920) the remaining portions of the Northwest Territories were divided into three provisional districts known as Mackenzie, Keewatin and Franklin.

[7] See p. 90.

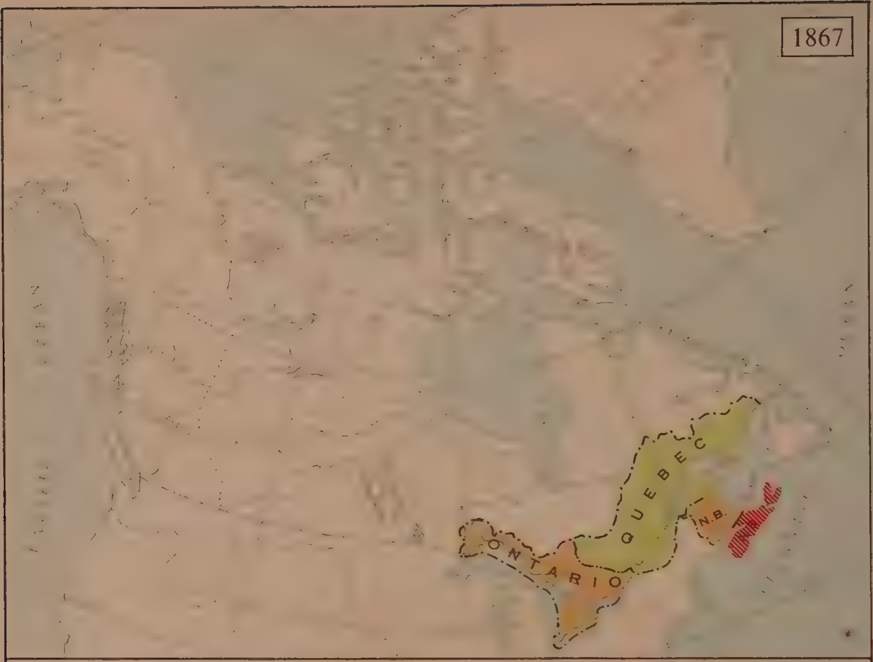
[8] The provisional district of Yukon established in 1895 was created a judicial district of the North-West Territories by proclamation issued pursuant to Sect. 51 of the North-West Territories Act (RSC 1886, c. 50) on Aug. 16, 1897 and by the Yukon Territory Act (SC 1898, c. 6) was declared to be a separate Territory.

POLITICAL EVOLUTION OF CANADA SINCE CONFEDERATION IN 1867

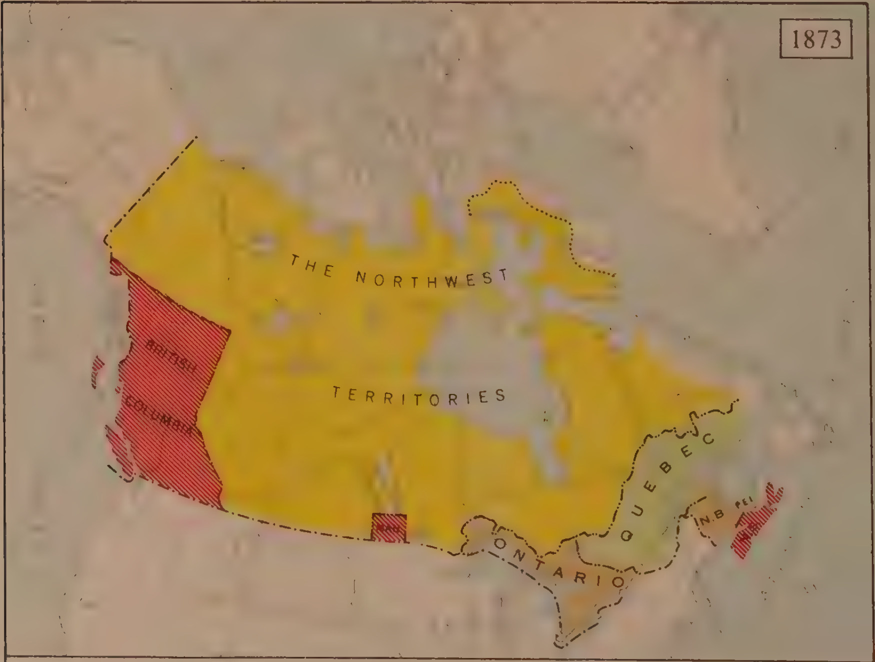
The maps show the principal stages by which Canada evolved into a Federal State of ten Provinces and two Territories


1866
BRITISH
AMERICAN
DANISH
RUSSIAN
GREENLAND
ALASKA
THE NORTH-WESTERN TERRITORY
BRITISH COLUMBIA
RUPERT'S LAND
NEWFOUNDLAND
CANADA
UNITED STATES OF AMERICA

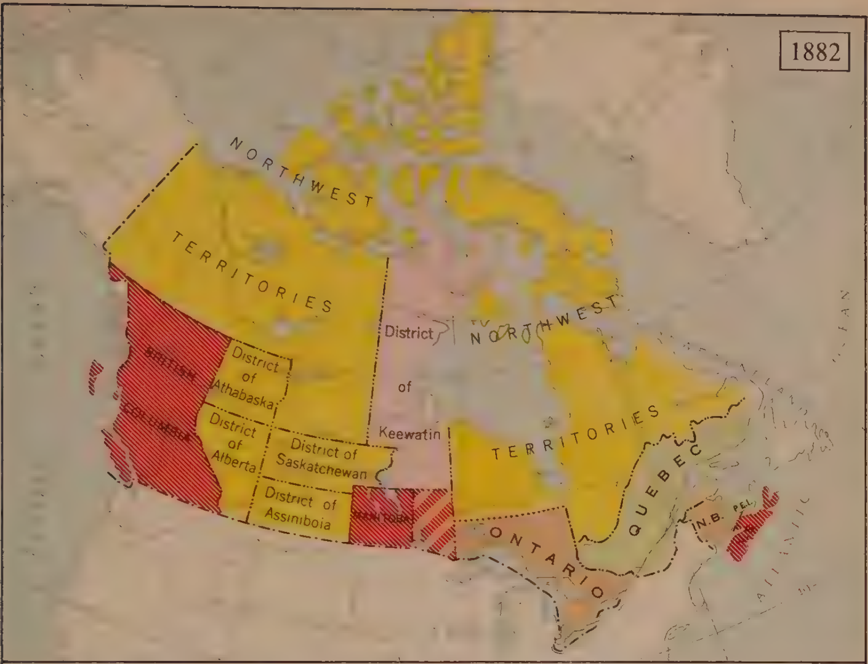
Territorial divisions of the northern half of the North American Continent immediately prior to the formation of the Dominion of Canada in 1867.


1867
QUEBEC
N.B.
ONTARIO

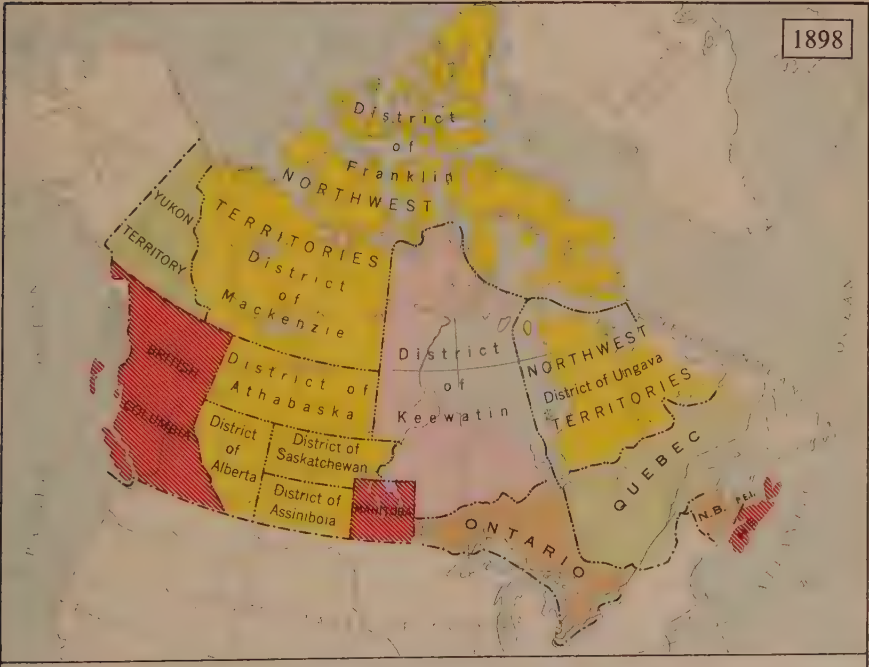
On July 1, 1867, the three provinces of Canada (the former provinces of Upper Canada and Lower Canada united in 1840), Nova Scotia and New Brunswick were formed into a Federal State, collectively known as Canada.


1873
THE NORTHWEST
TERRITORIES
BRITISH
COLUMBIA
QUEBEC
N.B
PEI
ONTARIO

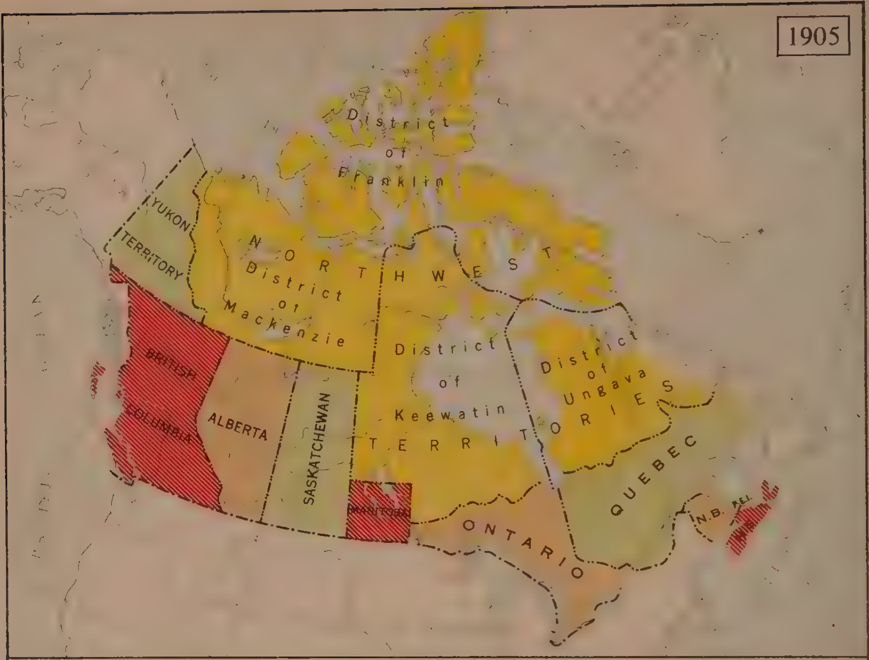
By 1873 Canada had acquired "Ruperts' Land and the North-Western Territory" (1870), changing their name to "North-West Territories" and creating the Province of Manitoba from part of them. British Columbia (1871) and Prince Edward Island (1873) were admitted to the Confederation as provinces.


1882
NORTHWEST
TERRITORIES
District of Athabaska
BRITISH COLUMBIA
District of Alberta
District of Saskatchewan
District of Assiniboia
MANITOBA
District of Keewatin
NORTHWEST
TERRITORIES
QUEBEC
ONTARIO
N.B.
P.E.I.

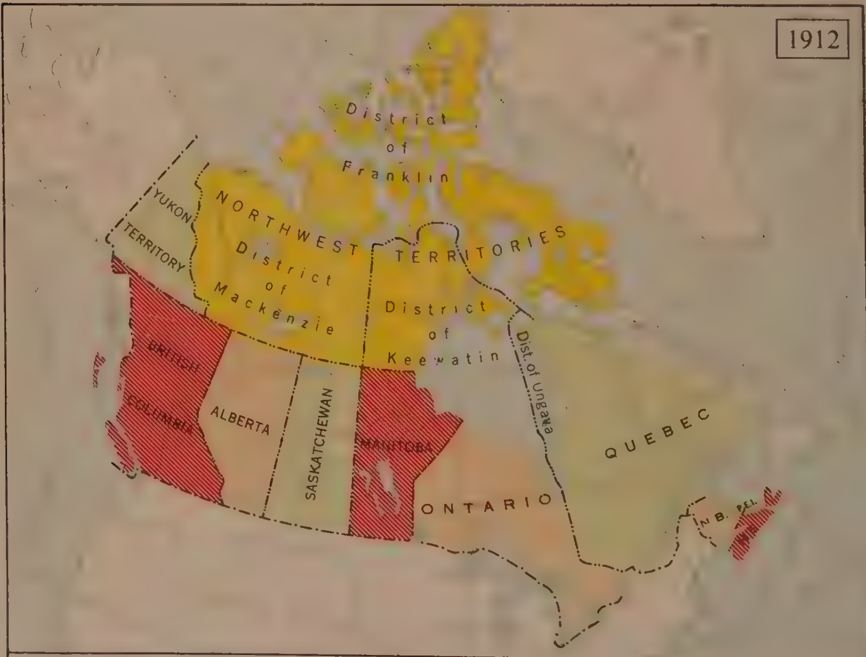
Provisional boundaries were established for Ontario in 1874 and in 1876 the District of Keewatin was formed. In 1880 the boundaries of Manitoba were extended and the islands north of the Canadian mainland passed to the Government of Canada. In 1882 the Districts of Assiniboia, Saskatchewan, Alberta and Athabaska were created within the North-West Territories.


1898
District of Franklin
NORTHWEST
TERRITORIES
YUKON TERRITORY
District of Mackenzie
District of Athabaska
BRITISH COLUMBIA
District of Alberta
District of Saskatchewan
District of Assiniboia
MANITOBA
District of Keewatin
NORTHWEST
District of Ungava
TERRITORIES
QUEBEC
ONTARIO
N.B.
P.E.I.

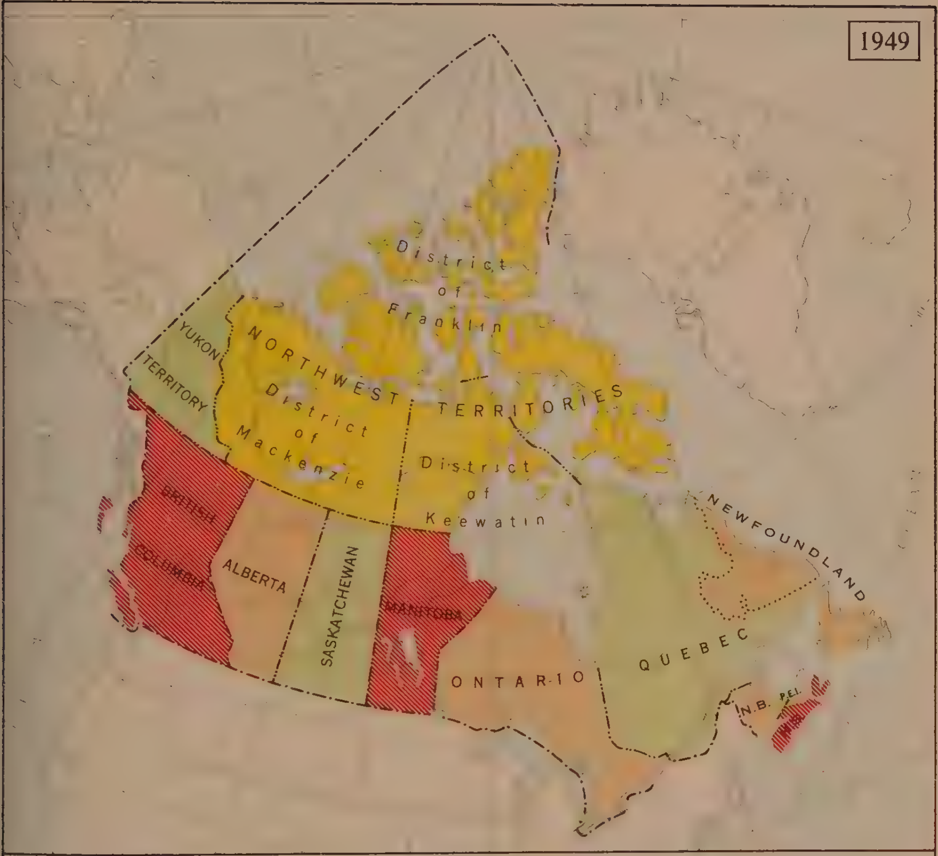
In 1895 the Districts of Ungava, Franklin, Mackenzie and Yukon were created; in 1897 changes were made in the boundaries of the northern Districts; and in 1898 the District of Yukon was made a separate Territory and the Province of Quebec was extended northward.


1905
District of Franklin
YUKON TERRITORY
NORTHWEST TERRITORIES
District of Mackenzie
District of Keewatin
District of Ungava
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
ONTARIO
QUEBEC
N.B.
P.E.I.

In 1905 the Provinces of Alberta and Saskatchewan were created and the District of Keewatin transferred back to the newly defined North-West Territories (Northwest Territories in 1906).


1912
District of Franklin
YUKON TERRITORY
NORTHWEST TERRITORIES
District of Mackenzie
District of Keewatin
Dist. of Ungava
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
ONTARIO
QUEBEC
N.B.
P.E.I.

In 1912, the Provinces of Ontario, Quebec and Manitoba were extended northward to Hudson Bay and Strait.


1949
District of Franklin
YUKON TERRITORY
NORTHWEST TERRITORIES
District of Mackenzie
District of Keewatin
NEWFOUNDLAND
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
ONTARIO
QUEBEC
N.B.
P.E.I.
N.S.

By 1925 Canada extended to the North Pole; in 1927 the Imperial Privy Council rendered a decision on the boundary between Newfoundland and Canada; and in 1949 Newfoundland was admitted to Confederation as Canada's tenth province.

PRODUCED FOR THE *CANADA YEAR BOOK 1961* BY THE SURVEYS AND MAPPING BRANCH, DEPARTMENT OF MINES AND TECHNICAL SURVEYS, OTTAWA.

The acquisition by Canada of Rupert's Land and the North-Western Territory enabled the Red River settlement, after a few months of disturbance, to receive limited provincial establishment under the name of "Manitoba" in 1870; provided the Federal Government with the public lands needed to help subsidize a transcontinental railway linking the Pacific with the Canadian East, thereby fulfilling the pledge to British Columbia to begin the Canadian Pacific Railway within two years and to complete it within ten years of the date of union, July 1, 1871; and laid, through the provision of millions of acres of public lands, the land and economic bases for the Federal Government's adoption of a free-homestead policy for the Canadian prairies that, in conjunction with the completion of the Canadian Pacific Railway and the launching of other railway lines, brought wave after wave of settlers into the Northwest Territories in such numbers as to justify the creation of the two Provinces of Saskatchewan and Alberta in 1905 out of the portion of the Northwest Territories south of the 60th parallel of north latitude. Although provision for their entry was included in the British North America Act, 1867, the Province of Prince Edward Island held back from the Union until 1873 and Newfoundland became Canada's tenth province on Mar. 31, 1949.

AMENDMENT OF THE CANADIAN CONSTITUTION*

The Constitution Defined

A constitution sets out the rules determining the creation and operation of the institutions of government. The Constitution of Canada has grown out of the British Constitution and both are the product of evolution rather than revolution. They are the consequence of prolonged and almost casual historical growth, rather than a carefully reasoned set of principles worked out at any one point of time. For this reason the Constitution has a number of sources, including Royal Letters Patent, despatches and instructions from the British Government to colonial governors, and Acts of the British and Canadian Parliaments. These elements have never been consolidated and fused together into a single basic document, with its own special rules of interpretation and amendment. Since the Statute of Westminster, 1931, Canadian legislatures are no longer subordinate to the British Parliament, and resolutions passed at Imperial Conferences in 1926 and 1930 made the Canadian Cabinet the sole advisers of the Sovereign on Canadian affairs, no longer subordinate in any way to the British Government. However, most of the basic provisions of the Canadian Constitution are contained in the British North America Act, passed by the British Parliament in 1867 to give effect to a federal union of the original provinces. This Act therefore contains most of the important parts of Canada's Constitution, which is why the British North America Act, with its various amendments, is normally thought of as the Canadian Constitution.

For reasons noted below, Canada still lacks the power directly to amend the British North America Act in certain important particulars. The question of transferring this amending power to wholly Canadian hands has been the subject of discussion and negotiation in Canada for over thirty years. In this time the British Government has been willing to agree to the transfer—the difficulty has stemmed from securing agreement in Canada on the form of amending procedure.

Associated with the setting up of a Canadian amending process has been a separate issue—the 'repatriation' or 'domiciling' of the Constitution in Canada. Already certain parts of the Constitution are based on Canadian instruments, the most important of which are the regulations governing the powers of the Head of State. In so far as the Governor General is concerned, his powers are now governed by the Letters Patent of 1947, a wholly Canadian instrument issued by the King on the advice of Canadian Ministers and under the Great Seal of Canada. Certain other aspects of royal powers are governed by a Canadian statute—the Seals Act, 1939. Many other important parts of Canada's Constitution are also found in Canadian statutes, such as the Supreme Court Act, 1949.

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* Prepared by J. R. Mallory, Department of Economics and Political Science, McGill University, Montreal.

THE AMENDING POWER IN 1867

Historically, it was assumed that colonial legislatures such as those of the early American colonies had the inherent right to amend their own constitutions in the same way as Parliament. However, these early colonies had been given constitutions by various kinds of royal grant, but in the case of colonies whose constitutions were provided by the Parliament of the United Kingdom it was assumed that the right of amendment still rested in Parliament unless expressly conferred. Since the constitution of the two Canadian provinces (now Ontario and Quebec) had been provided by the Quebec Act (1774), the Canada Constitution Act (1791) and the Act of Union (1840), it could be amended only by Imperial statute, such as the Act of 1854 which provided for the election of the Legislative Council. Thus, unless some amending procedure was provided in the British North America Act in 1867, the amending power would be deemed to remain in the British Parliament.*

Very little consideration seems to have been given to this question in the Confederation Debates in the Canadian Parliament in 1865, and the matter is not referred to at all in the Quebec resolutions except indirectly where the general power of the central parliament to legislate for the "peace, welfare, and good Government" is qualified by the saving clause "saving the Sovereignty of England". In the London Resolutions, which were the final basis of the British North America Act, a power to amend their own constitutions was provided for the provinces but not for the central legislature nor for the federation scheme as a whole. The most explicit reference to the question is the statement of D'Arcy McGee, "we go to the Imperial Government, the common arbiter of us all, in our true Federal metropolis—we go there to ask for our fundamental Charter. We hope, by having that Charter that can only be amended by the authority that made it, that we will lay the basis of permanency for our future government."† It may well have been that the question of an amending procedure was deliberately set aside because it could have added a further difficulty to the number of complex questions which had to be settled if the Union was to be achieved. Furthermore, it has been suggested that "the Imperial authority was . . . considered as the ultimate safeguard of the rights granted to the provinces and to minorities by the constitution".‡

However that may be, the role of the United Kingdom Government and Parliament as an external balancer in the Canadian Constitution has been fundamentally altered by the change in the constitutional relations of Canada and the United Kingdom since 1926. In that year, an Imperial Conference declared that the United Kingdom and the self-governing dominions were "autonomous communities within the British Empire, equal in status, in no way subordinate to one another in any aspect of their domestic or external affairs". Subsequently, by the Statute of Westminster, 1931, the dominions were brought into full equality with the United Kingdom by the removal of all restrictions on their legislative jurisdiction.

The Statute of Westminster did contain one important saving clause in relation to Canada. Its liberating provisions did not apply to the British North America Act and its amendments. The reason for this was simple. Had the Statute of Westminster been applied without reservation to Canada its effect would have been to enable the Parliament of Canada to amend the British North America Act. There was objection in Canada to denying to the provinces the right to be consulted about or to participate in the amending procedure. Accordingly, it was necessary to exclude the British North America Act from the operation of the Statute of Westminster, on the assumption that agreement would have to be reached later on an amending procedure which contained appropriate safeguards to the position of the provinces. Sect. 7 of the Statute of Westminster repealed the Colonial Laws Validity Act, 1865, under which laws were invalid if they were repugnant to British statutes that had effect in Canada. This repeal extended only to legislation enacted by the Federal Parliament and the provincial legislatures in the spheres assigned to them by the British North America Act. The repugnancy rule still applied to the British North America Acts, 1867 to 1930. That is, no Canadian legislature could either amend them or pass legislation inconsistent with them, except as provided by the British North America Acts themselves.

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* See Martin Wight *The Development of the Legislative Council 1606-1945* (London, 1946) 122.

† *Confederation Debates, 1865*, 146.

‡ Paul Gerin-Lajoie *Constitutional Amendment in Canada* (Toronto, 1950) 38.

The restriction on the right to amend the Canadian Constitution in Canada, as continued by the Statute of Westminster, was in part removed by the British North America (No. 2) Act, 1949. This Act inserted a new Subsect. (1) into Sect. 91, which conferred on the Parliament of Canada the power to amend the British North America Act except in respect of provincial and educational rights safeguarded in the Constitution, and the rights to the use of the French and English languages. It also provided a special procedure for amendments that would either modify the provision for the annual meeting of Parliament or extend the life of a Parliament beyond the five-year maximum laid down in the British North America Act.

FORMAL AMENDMENTS TO THE BRITISH NORTH AMERICA ACT—INITIATING PROCEDURES

While the United Kingdom Parliament was the sole authority for amending the British North America Act, it was long recognized that the initiative for such changes should come from Canada. The requests for a few of the earlier amendments came from the Canadian Government but the practice soon became established that this should not be done without prior consent of the Canadian Parliament. A resolution carried in the House of Commons by 137 to none in 1871 asserted that "no changes in the provisions of the British North America Act should be sought by the Executive Government, without the previous assent of the Parliament of this Dominion". The proper form of initiating an amendment has thus become an Address from both Houses of Parliament to the Sovereign, praying that an amendment be laid before the United Kingdom Parliament. It is now customary to append to this Address a draft bill embodying the proposed amendment. The agreement of both Houses, of course, gives the Senate the right to veto or modify an amendment initiated in the Commons—the Senate was able to secure modifications of proposed amendments in 1915 dealing with parliamentary representation, and in 1960 dealing with the retirement of judges. The Senate also refused to concur in a requested amendment of 1936 which would have limited the rights of provinces to borrow money and clarified the distribution of taxing power under the Constitution.

Since the procedure antecedent to the presentation of an amending Bill is not governed by statutory requirements, the degree of consultation of affected interests is governed only by convenience and practice. The provinces have no legal right to be consulted on constitutional amendments, and have no *locus standi* with the British Government or Parliament either to promote or oppose an amendment. However, in matters affecting the legislative powers of the provinces, they are invariably consulted and their agreement obtained before an Address to the Sovereign is presented from Parliament.

AMENDMENTS TO THE BRITISH NORTH AMERICA ACT—THE PRESENT POSITION

At present there are three quite separate procedures for amending different parts of the British North America Act. Only one of these methods is still a subject of difficulty—that which applies to what are called the 'safeguarded' parts of the Act. This is the method yet to be 'repatriated' to Canada and replaced by an agreed procedure which satisfies the need to entrench basic provincial and minority rights and has sufficient flexibility to ensure that the Constitution can be changed to meet changing circumstances. The present methods of amendment are as follows.

1. *Amendment of 'Safeguarded' Parts of the Act.*—These parts of the British North America Act must still be amended by the United Kingdom Parliament. An amendment is initiated by an Address of both Houses of the Canadian Parliament to the Sovereign, praying that a proposed amendment may be laid before the Parliament of the United Kingdom. It is established practice to consult the provinces before seeking such amendments, and to secure the agreement of all provincial governments to the terms of the proposal. However, the consent of the provincial legislatures does not seem normally to

have been sought. A provincial government which sought to block an amendment on the ground that it had not been consulted would lack any effective procedure for doing so, since it would have no direct access to either the Government or Parliament of the United Kingdom. There is uncertainty as to the full extent of the parts of the British North America Act which must be amended in this way, but it is certain that this procedure extends to Sects. 92 (exclusive powers of provincial legislatures); 93 (provincial jurisdiction over education and educational rights of certain minorities); 94 (uniformity of provincial laws); 94A (old age pensions); 95 (concurrent jurisdiction in agriculture and immigration); 97-98-99 (selection and tenure of judges of provincial courts); and an uncertain number of other sections dealing with such matters as freedom of trade within the union (Sect. 121).

2. *Amendment of Provincial Constitutions by Provincial Legislatures.*—Part V of the British North America Act (Sects. 58-90) and a number of the Miscellaneous Provisions deal with provincial constitutions (mostly with respect to Ontario and Quebec which were created *de novo* in 1867 out of the United Province of Canada). Sect. 92 (1) gives to the provincial legislatures the exclusive power to amend their own constitutions "except as regards the office of Lieutenant-Governor". The amending power is thus vested in the legislature of the province and changes have been made in provincial constitutions by ordinary statutory enactments. Thus, for example, Ontario and Quebec have altered the compositions of their legislatures and their Executive Councils, both of which were provided for in the British North America Act. New Brunswick and Nova Scotia have abolished the upper chamber in their legislatures. All provinces have made numerous changes in their machinery of government which might be classed as constitutional amendments.

3. *Amendment by the Parliament of Canada.*—The British North America Act provided in 1867 that certain of its provisions could be modified, repealed or extended by the Parliament of Canada. This power was considerably extended by the British North America (No. 2) Act, 1949, which added to the powers of the Parliament of Canada a general power to amend "the Constitution of Canada", except as regards the exclusive legislative powers of the provinces, exclusive rights or privileges granted to the provinces, the rights of certain minorities with regard to schools, and rights to the use of the English or French languages. At the same time, the power to extend the life of parliament or to modify the provision for annual parliaments could be exercised only in emergencies and provided that it was not opposed by at least one-third of the members of the House of Commons. Since 1949, by virtue of this power, Parliament has made modifications in the provisions in the British North America Act for the decennial redistribution of seats in the House of Commons.

ATTEMPTS TO DEVISE AMENDING PROCEDURES

A number of proposals for a suitable amending procedure were laid before a Select Committee of the House of Commons which considered the matter in 1935, and in December 1935 a Dominion-Provincial Conference met at Ottawa to consider, *inter alia*, the procedure for amending the British North America Act. This matter was dealt with in a sub-conference of federal and provincial attorneys general, which group agreed that the power to amend the Canadian Constitution should be vested in Canada "provided that a method of procedure therefore satisfactory to the Dominion Parliament and to the provincial legislatures be devised". Preparation of such a method was left to a sub-committee. After various discussions, the following proposal emerged in the sub-committee in 1936: (*a*) that an amendment be sought to the Statute of Westminster replacing Sect. 7 of that Act by a new one removing the exemption of the British North America Acts from the operation of the Statute; (*b*) a power to enact a consolidated constitution and a new amending clause be conferred on the Parliament of Canada. The Constitution was to be divided into four parts and amendment of each part could be initiated in the House of Commons on the recommendation of the Governor General. Should the Senate fail to concur in a proposed amendment, a joint sitting should be held during the same session to decide the issue. Where provincial concurrence was required, failure to take any action at all by a provincial legislature would be considered to be approval. Subject to these general rules, parts of the Constitution referring only to the central government machinery and having no relation to the federal character of the country should be amended by action of the Federal Parliament alone. In matters of exclusive provincial concern and in matters of mutual concern to provincial and federal levels of government, there should be joint action of the Federal Parliament and of the legislatures of two-thirds of the provinces representing at least 55 p.c. of the population. There were included amendments relating to the composition of the Senate and to the distribution of legislative power, excepting items 12 and 14 of Sect. 92. Difficulty was experienced in dealing with items 13 and 16, but a suggested compromise was that where an amendment relating to them was carried by the two-thirds and 55 p.c. rule it would still be possible for a dissenting province to continue to enjoy exclusive jurisdiction over the matter dealt with in the amendment. Finally, there were entrenched sections that could be amended only by unanimous agreement—parliamentary representation, solemnization of marriage, administration of justice, provincial courts and civil procedure, education, and the use of the English and French languages.

One province dissented from these proposals and they were never proceeded with. They represented the closest that Canada had ever come to an agreed amending procedure. The sub-conference did not meet again, and the general question of amending procedure was not revived until 1950.

In that year a conference of the federal and provincial governments met in January and re-convened in September of the same year. A committee of attorneys-general agreed on the following report.

"Your committee recommends the following resolutions:—

1. That the provisions of the British North America Acts, 1867-1949 and other constitutional Acts be grouped under six heads, namely:—

(1) Provisions which concern parliament only.
(2) Provisions which concern the provincial legislatures only.
(3) Provisions which concern parliament and one or more but not all of the provincial legislatures.
(4) Provisions which concern parliament and all of the provincial legislatures.
(5) Provisions concerning fundamental rights (as for instance but without restriction, education, language, solemnization of marriage, administration of justice, provincial property in lands, mines and other natural resources) and the amendment of the amending procedures.
(6) Provisions which should be repealed.

2. That in respect of group (1) amendment shall be made by an Act of the Parliament of Canada.

3. That in respect of group (2) amendment shall be made by Acts of the provincial legislatures.

4. That in respect of group (3) provision be made for amendment by an Act of the Parliament of Canada and an Act of the legislatures of each of the provinces affected.

5. That in respect of group (4) provision be made for amendment by an Act of the Parliament of Canada and Acts of such majority of the legislatures and upon such additional conditions, if any, as may be decided upon.

6. That in respect of group (5) provision be made for amendment by an Act of the Parliament of Canada and Acts of the legislatures of all the provinces.

7. It is recommended that the process of amendment in respect of categories (3) to (6) inclusive of paragraph 1 be capable of being initiated by one or more of the provincial legislatures or by the Parliament of Canada.

8. In the opinion of this committee, the subject of delegation of powers should be placed upon the agenda."*

It will be seen at once that greater degree of unanimity gained over that obtained in 1935 had been obtained at a price—a more complex procedure with a greater degree of rigidity. It further became apparent, when the Conference remitted to a continuing committee of attorneys-general the task of fitting the detailed sections of the Constitution into the six pigeon-holes provided, that there were still wide differences on major matters of principle. No substantial progress was therefore made until the question was again taken up in 1960.

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* See Canada Year Book 1951, pp. 103-105.

Several reasons may be suggested for the failure to achieve concrete results—particularly after the apparent agreement on a general formula in 1950. In the first place the unilateral action of the Federal Government in obtaining the new amending procedure in 1949—before the federal-provincial conference was due to meet—did not improve the prospects of agreement with the provinces. Secondly, several provincial governments were not anxious to rush into a new amending procedure, preferring the certainty of what they knew to the uncertainty of the unknown. An amending procedure that made the Constitution much more rigid would be worse than the present one. Finally, it should be noted that the urgent need for constitutional amendment was not felt so acutely in the 1950's. The discussion of the amending procedure in the 1930's arose out of a desperate anxiety to adapt the machinery of government to meet the challenge of a national disaster at a time when it seemed the Constitution itself made effective remedial action ineffective. In the postwar period this sense of urgency was lost because the fiscal and monetary techniques developed during the War, together with the wide powers of the central government over defence, seemed adequate for effective national government without any constitutional change.

The only remaining reason for a change in the amending procedure was the question of prestige and constitutional tidiness. It has become increasingly difficult to explain—either to Canadians or to foreigners—why the constitution of an independent State still must be returned to the Parliament of another country—like a rented suit to the tailors—whenever alterations in it are required.

In any event, the question was revived at the federal-provincial conference held in November 1960. Indication was given that progress might be more rapid if the two stages of the problem were dealt with separately, i.e., that steps be taken to 'domicile' the Constitution first, and that agreement be reached later on the details of the amending procedure. It would seem, however, that the two are inseparable and that nothing can be gained by re-enacting the Constitution in Canada if the Constitution does not have some machinery for its own amendment. The outstanding legal problems under discussion at that time were as follows.

1. *The Techniques of Repatriation.*—It would not suffice simply to re-enact the British North America Act as a Canadian statute, because this is the one British statute which the Parliament of Canada cannot (except as described above) alter directly. A necessary first step would be to seek an amendment to Sect. 7 of the Statute of Westminster, before arranging for the repeal of the British North America Acts by the British Parliament and an enactment in Canada of the Canadian Constitution.

As a matter of purely abstract law, this would not affect the supremacy of the British Parliament over the Canadian Constitution, nor the theoretical power of the British Parliament to repeal the Statute of Westminster and thus by implication revoke the legislative sovereignty which that Act provided for Canada. This is not, however, a matter of any practical importance. As Lord Sankey said, "It is doubtless true that the power of the Imperial Parliament to pass on its own initiative any legislation that it thought fit extending to Canada remains unimpaired, indeed, the Imperial Parliament could, as a matter of abstract law, repeal or disregard section 4 of the Statute. But that is theory and has no relation to realities."*

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* *British Coal Corporation v. the King* (1935) AC 500, at p. 520.

2. *The Problem of 'Property and Civil Rights'*.—The extent of the 'safeguarded' clauses of the Constitution has been the major barrier to agreement on a new amending procedure for a quarter of a century. The essence of the matter is to determine the true area of 'property and civil rights' in the Constitution. The intention of the Fathers of Confederation was, in all probability, to safeguard by this phrase the system of private law in the Province of Quebec, which is founded on Roman rather than Common Law principles. The provision in Sect. 94, for uniformity of laws in the other provinces, to be brought about with their agreement by the enactment of uniform laws by Parliament suggests that this was their intention. However, the courts have interpreted the phrase much more widely to include practically the whole area of public policy in social legislation. A strong case on practical grounds can be made for making such legislation uniform throughout Canada. The chief obstacle to such uniformity is that the juridical widening of the meaning of 'property and civil rights' has made it possible for the Province of Quebec to assert its right to develop its own unique approach to social welfare.* If this part of Sect. 92 can be amended only by unanimous consent, there is introduced a severe rigidity and a completely effective obstacle to uniformity in the field of social legislation.

3. *The Problem of Delegation.*—The difficulty created by entrenching 'property and civil rights' in the Constitution might be avoided if it were possible, in the interests of efficiency and uniformity, for the provinces to delegate to the Federal Parliament powers that are assigned to them under the Constitution, but which they are willing to transfer.

There are two difficulties that stand in the way of modifying the present distribution of legislative power in order to permit the Federal Government to deal with a number of problems of national concern which were not foreseen as major functions of government in 1867. The first difficulty is that the Constitution as presently interpreted by the courts appears not to permit such delegation of authority from one level of government to another, because the courts have viewed the Constitution as dividing legislative power into "watertight compartments".† It would be possible to avoid this obstacle by a constitutional amendment validating such delegation.

The second obstacle is that, unless there were unanimous agreement among the provinces on what might be delegated, a situation might be created in which some provinces would be exercising legislative authority over a field—such as health insurance or the marketing of a natural product—while others had delegated their power to do so to Parliament. Thus the principle of symmetry and uniformity in the federal system would be lost. However, Sect. 94 already envisages a kind of asymmetry in which one province makes its own law relating to property and all of the others delegate the power to make uniform laws to Parliament. Thus, it may be that such a solution to the problem might be envisaged, though from one point of view it concedes far too much to the notion of "provincial rights" and seems to recognize the existence of a federal system in which the national Parliament and Government perform only the most limited and narrow functions in the Province of Quebec, but act as the centre of a much more unified federal State for the other nine provinces. There are many reasons why such a partial solution would be undesirable, but it may be the only workable compromise if the matter of domesticating the amending procedure is regarded as so urgent that further delay cannot be tolerated.

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* "Quebec, in particular, could not easily consent to [the amendment of Sect. 92 by simple majority of provinces without renouncing not only part of its political autonomy but also its cultural autonomy, that is to say, the power of organizing independently the social life of its population according to its own conceptions of Man and life in society. For Quebec it was not merely a matter of greater material security, but of the maintenance and progress of its social institutions and of the way of life and very existence of the French-Canadian group as such." Quebec: *Royal Commission of Enquiry on Constitutional Problems* (1956) p. 167 (English text).

† *Attorney-General of Canada v. Attorney-General of Ontario* (1937) AC 326 at p. 354; *Attorney-General of Canada v. Attorney-General of Nova Scotia* (1951) SCR 31.

PART II.—MACHINERY OF GOVERNMENT

Section 1.—The Federal Government

Subsection 1.—The Executive

The Crown.—The British North America Act provides that "the Executive Government and authority of and over Canada is . . . vested in the Queen". The functions of the Crown, which are substantially the same as those of the Queen in relation to the Government of the United Kingdom, are discharged in Canada by the Governor General in accordance with established principles of responsible government. The practical executive functions of government are exercised by the Cabinet.

The Queen.—The personal participation of the Queen in the functions of the Crown in Canada has been limited to such occasions as the granting of honours and awards, approval of changes in the Table of Precedence, institution of new military awards, or the periodic appointment of a Governor General. On the occasion of a royal visit, the Queen may participate in those ceremonies that otherwise are carried out in her name, such as the opening and dissolution of Parliament, the assent to Bills, and the granting of a general amnesty.

Apart from her constitutional position in relation to the various governments of the Commonwealth countries, the Queen is Head of the Commonwealth and symbolizes the association of the member countries. Until 1953 the title of the Queen was the same throughout the Commonwealth. Constitutional developments put the title somewhat out of accord with the facts of the position, and in December 1952 it was decided by the Prime Ministers of the Commonwealth countries meeting at London, England, that new forms of title for each country should be devised. The title for Canada was approved by Parliament and established by a Royal Proclamation on May 29, 1953. The title of the Queen, so far as Canada is concerned, now is:—

> "Elizabeth the Second, by the Grace of God of the United Kingdom, Canada and Her other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith".

1.—Sovereigns of Canada since Confederation, 1867

Name	Dynasty	Year of Birth	Date of Accession
Victoria	House of Hanover	1819	June 20, 1837
Edward VII	House of Saxe-Coburg and Gotha	1841	Jan. 22, 1901
George V	House of Windsor	1865	May 6, 1910
Edward VIII	House of Windsor	1894	Jan. 20, 1936
George VI	House of Windsor	1895	Dec. 11, 1936
Elizabeth II	House of Windsor	1926	Feb. 6, 1952

The Governor General.—The Governor General, appointed by the Queen as her personal representative on the advice of the Prime Minister of Canada, traditionally serves for a term of five years. He exercises the executive authority of the Queen in relation to the Government of Canada under Letters Patent issued under the Great Seal of Canada (revised and re-issued, effective Oct. 1, 1947) and the provisions of the British North America Acts, 1867 to 1952. Acting under the recommendations of his responsible Ministers, in the Queen's name, he summons, prorogues and dissolves Parliament, assents to Bills, and exercises other executive functions.

The Governor General's annual salary and allowances provided by the Parliament of Canada are $48,666 and $100,000, respectively. In addition, other expenses of office are provided for, including the salary of the Governor General's secretary.

The present Governor General is styled His Excellency Major-General Georges P. Vanier, D.S.O., M.C., C.D.

2.—Governors General of Canada since Confederation, 1867

Name	Date of Appointment	Date of Assumption of Office
Viscount Monck, G.C.M.G.	June 1, 1867	July 1, 1867
Lord Lisgar, G.C.M.G.	Dec. 29, 1868	Feb. 2, 1869
The Earl of Dufferin, K.P., K.C.B., G.C.M.G.	May 22, 1872	June 25, 1872
The Marquis of Lorne, K.T., G.C.M.G.	Oct. 5, 1878	Nov. 25, 1878
The Marquis of Lansdowne, G.C.M.G.	Aug. 18, 1883	Oct. 23, 1883
Lord Stanley of Preston, G.C.B.	May 1, 1888	June 11, 1888
The Earl of Aberdeen, K.T., G.C.M.G.	May 22, 1893	Sept. 18, 1893
The Earl of Minto, G.C.M.G.	July 30, 1898	Nov. 12, 1898
Earl Grey, G.C.M.G.	Sept. 26, 1904	Dec. 10, 1904
Field Marshal H. R. H. The Duke of Connaught, K.G.	Mar. 21, 1911	Oct. 13, 1911
The Duke of Devonshire, K.G., G.C.M.G., G.C.V.O.	Aug. 19, 1916	Nov. 11, 1916
General The Lord Byng of Vimy, G.C.B., G.C.M.G., M.V.O.	Aug. 2, 1921	Aug. 11, 1921
Viscount Willingdon of Ratton, G.C.S.I., G.C.I.E., G.B.E.	Aug. 5, 1926	Oct. 2, 1926
The Earl of Bessborough, G.C.M.G.	Feb. 9, 1931	Apr. 4, 1931
Lord Tweedsmuir of Elsfield, G.C.M.G., G.C.V.O., C.H.	Aug. 10, 1935	Nov. 2, 1935
Major-General The Earl of Athlone, K.G., P.C., G.C.B., G.C.M.G., G.C.V.O., D.S.O.	Apr. 3, 1940	June 21, 1940
Field Marshal Viscount Alexander of Tunis, K.G., G.C.B., G.C.M.G., C.S.I., D.S.O., M.C., A.D.C.	Aug. 1, 1945	Apr. 12, 1946
The Right Honourable Vincent Massey, C.H.	Jan. 24, 1952	Feb. 28, 1952
Major-General Georges P. Vanier, D.S.O., M.C., C.D.	Aug. 1, 1959	Sept. 15, 1959

The Cabinet.—The Cabinet is a committee of Ministers chosen by the Prime Minister generally from Members of Parliament. By convention, all members of the Cabinet must either have seats in Parliament or secure seats within a short time and, again by convention, all Ministers in charge of departments of government must be members of the House of Commons. Ministers without Portfolio can be members of either House.

The Cabinet, under the leadership of the Prime Minister, directs the business of the Commons, initiates nearly all public Bills placed before Parliament, and has complete responsibility for the initiation of taxes and the recommendation of expenditures. Following established precedent or convention, it is always responsible to the Commons. When the Cabinet (the Government) suffers defeat on a Government Bill or a vote of censure or on a motion of want of confidence in the Commons, the existing Government or Cabinet must either resign or request a dissolution from the Governor General. If it resigns, the Governor General may call on the Leader of the Opposition in the Commons to form a new Government. Alternatively, if a Government that has been defeated in the House is granted a dissolution and is defeated in the ensuing general election then, should no clear majority be indicated, the Government may decide (1) to remain in office and seek a vote of confidence in the House when it meets or (2) to resign immediately with the consequent result that the Governor General will ask the leader of the party with the highest number of members returned to form a new Government. These alternatives may also eventuate as a result of a general election subsequent to the normal dissolution of Parliament at or near the close of its statutory life.

The primary responsibility of the Governor General in either of the above circumstances is to provide the nation with a Cabinet or Ministry capable of conducting Her Majesty's Government with the support of the House of Commons.

Although appointed by the Governor General, Cabinet members are selected by the Prime Minister from among his party colleagues in such manner as to ensure, as far as possible, representation of the several geographical and political regions of the country and its principal ethnic, religious and social interests. Each Cabinet Minister generally assumes charge of one of the departments of government, although a Minister may hold more than one portfolio at the same time or he may hold one or more portfolios and one or more acting portfolios, or a Minister without Portfolio may hold one or more acting portfolios. In his acting capacity, the Minister exercises the same authority as if he were the Minister of the department. Sessional and other allowances received by Cabinet Ministers are given at pp. 73-74.

3.—Prime Ministers since Confederation, 1867

Ministry	Prime Minister	Length of Administration
1	Rt. Hon. Sir John Alexander Macdonald	July 1, 1867 — Nov. 5, 1873
2	Hon. Alexander Mackenzie	Nov. 7, 1873 — Oct. 16, 1878
3	Rt. Hon. Sir John Alexander Macdonald	Oct. 17, 1878 — June 6, 1891
4	Hon. Sir John Joseph Caldwell Abbott	June 16, 1891 — Nov. 24, 1892
5	Rt. Hon. Sir John Sparrow David Thompson	Dec. 5, 1892 — Dec. 12, 1894
6	Hon. Sir Mackenzie Bowell	Dec. 21, 1894 — Apr. 27, 1896
7	Hon. Sir Charles Tupper	May 1, 1896 — July 8, 1896
8	Rt. Hon. Sir Wilfrid Laurier	July 11, 1896 — Oct. 6, 1911
9	Rt. Hon. Sir Robert Laird Borden	Oct. 10, 1911 — Oct. 12, 1917 (Conservative Administration)
10	Rt. Hon. Sir Robert Laird Borden	Oct. 12, 1917 — July 10, 1920 (Unionist Administration)
11	Rt. Hon. Arthur Meighen	July 10, 1920 — Dec. 29, 1921 (Unionist—"National Liberal and Conservative Party")
12	Rt. Hon. William Lyon Mackenzie King	Dec. 29, 1921 — June 28, 1926
13	Rt. Hon. Arthur Meighen	June 29, 1926 — Sept. 25, 1926
14	Rt. Hon. William Lyon Mackenzie King	Sept. 25, 1926 — Aug. 6, 1930
15	Rt. Hon. Richard Bedford Bennett	Aug. 7, 1930 — Oct. 23, 1935
16	Rt. Hon. William Lyon Mackenzie King	Oct. 23, 1935 — Nov. 15, 1948
17	Rt. Hon. Louis Stephen St. Laurent	Nov. 15, 1948 — June 21, 1957
18	Rt. Hon. John George Diefenbaker	June 21, 1957 — ...

4.—Members of the Eighteenth Ministry, as at Jan. 1, 1961[1]

(According to precedence of Ministers)

Note.—A complete list of the members of Federal Ministries from Confederation to 1913 appears in the 1912 Year Book, pp. 422-429. Later Ministries will be found in subsequent editions.

Office	Occupant	Date of First Appointment[2]	Date of Appointment to Present Portfolio
Prime Minister	Rt. Hon. John George Diefenbaker	June 21, 1957	June 21, 1957
Secretary of State for External Affairs	Hon. Howard Charles Green	June 21, 1957	June 4, 1959
Minister of Finance and Receiver General	Hon. Donald Methuen Fleming	June 21, 1957	June 21, 1957
Minister of Trade and Commerce	Hon. George Hees	June 21, 1957	Oct. 11, 1960
Minister of Transport	Hon. Léon Balcer	June 21, 1957	Oct. 11, 1960
Minister of Veterans Affairs	Hon. Gordon Churchill	June 21, 1957	Oct. 11, 1960
Minister of Justice and Attorney General	Hon. Edmund Davie Fulton	June 21, 1957	June 21, 1957
Minister of National Revenue	Hon. George Clyde Nowlan	June 21, 1957	June 21, 1957
Minister of National Defence	Hon. Douglas Scott Harkness	June 21, 1957	Oct. 11, 1960
Minister of Citizenship and Immigration	Hon. Ellen Louks Fairclough	June 21, 1957	May 12, 1958
Minister of Fisheries	Hon. J. Angus MacLean	June 21, 1957	June 21, 1957
Minister of Labour	Hon. Michael Starr	June 21, 1957	June 21, 1957
Postmaster General	Hon. William McLean Hamilton	June 21, 1957	June 21, 1957
Solicitor General	Hon. William J. Browne	June 21, 1957	Oct. 11, 1960
Minister of Mines and Technical Surveys	Hon. Paul Comtois	Aug. 7, 1957	Aug. 7, 1957
Minister of National Health and Welfare	Hon. Jay Waldo Monteith	Aug. 22, 1957	Aug. 22, 1957
Minister of Agriculture	Hon. Francis Alvin George Hamilton	Aug. 22, 1957	Oct. 11, 1960
Minister of Defence Production	Hon. Raymond Joseph Michael O'Hurley	May 12, 1958	May 12, 1958
Minister of Public Works	Hon. David James Walker	Aug. 20, 1959	Aug. 20, 1959
Associate Minister of National Defence	Hon. Joseph Pierre Albert Sévigny	Aug. 20, 1959	Aug. 20, 1959
Minister of Forestry	Hon. Hugh John Flemming	Oct. 11, 1960	Oct. 11, 1960
Secretary of State	Hon. Noël Dorion	Oct. 11, 1960	Oct. 11, 1960
Minister of Northern Affairs and National Resources	Hon. Walter Dinsdale	Oct. 11, 1960	Oct. 11, 1960
Minister without Portfolio	Hon. George Ernest Halpenny	Oct. 11, 1960	Oct. 11, 1960

[1] Any changes occurring between Jan. 1, 1961 and the date of going to press will be carried in an Appendix to this volume. [2] Appointee was not necessarily sworn in on date given.

Parliamentary Secretaries.—As provided by the Parliamentary Secretaries Act (SC 1959, c. 15), assented to June 4, 1959, 15 Parliamentary Secretaries were appointed (one on Aug. 20, 1959 and 14 on Nov. 18, 1959) from among the Members of the House of Commons to hold office for twelve months and to assist the respective Ministers in such manner as each Minister may direct. In so doing, the Government revived the system of parliamentary assistantships in practice during the war and postwar years subsequent to 1943, whereby Cabinet Ministers might receive assistance in the performance of their parliamentary functions and promising Members of the House might secure a degree of apprenticeship for higher public office. These appointments were extended for one year on Nov. 18, 1960 and a second Parliamentary Secretary to the Minister of Agriculture was appointed on Oct. 11, 1960. Table 5 lists Parliamentary Secretaries in office on Jan. 1, 1961.

5.—Parliamentary Secretaries, as at Jan. 1, 1961

Secretary	Minister	Date of First Appointment
Thomas M. Bell	Justice	Nov. 18, 1959
Richard A. Bell	Finance	Nov. 18, 1959
L. E. Cardiff	Agriculture	Nov. 18, 1959
Egan Chambers	National Defence	Nov. 18, 1959
John A. Charlton	Citizenship and Immigration	Nov. 18, 1959
Roland L. English	Fisheries	Nov. 18, 1959
Clayton W. Hodgson	Transport	Nov. 18, 1959
Harry Jones	Veterans Affairs	Nov. 18, 1959
Warner J. Jorgenson	Agriculture	Oct. 11, 1960
Marcel Lambert	National Revenue	Nov. 18, 1959
Paul Martineau	Prime Minister	Nov. 18, 1959
Edmund L. Morris	Trade and Commerce	Nov. 18, 1959
Wallace B. Nesbitt	External Affairs	Aug. 20, 1959
John C. Pallett	Prime Minister	Nov. 18, 1959
Yvon-Roma Tassé	Public Works	Nov. 18, 1959
Richard D. Thrasher	Labour	Nov. 18, 1959

The Privy Council.—The Queen's Privy Council for Canada is composed of around ninety members who are sworn of the Council by the Governor General on the advice of the Prime Minister and who retain membership for life. The Council consists chiefly of present and former Ministers of the Crown. It seldom meets as a body and its constitutional responsibilities as adviser to the Crown in respect to Canada are performed exclusively by a committee thereof consisting of the Ministers who constitute the Cabinet of the day and are also members of the Queen's Privy Council for Canada.

6.—Members of the Queen's Privy Council for Canada According to Seniority Therein, as at Jan. 1, 1961

Note.—In this list the prefix "Rt. Hon." indicates membership in the United Kingdom Privy Council. Clerk of the Privy Council and Secretary to the Cabinet, R. B. Bryce; Assistant Clerk of the Privy Council, A. M. Hill.

Member[1]	Date When Sworn In	Member[1]	Date When Sworn In
Hon. Esioff Léon Patenaude	Oct. 6, 1915	Hon. George Black	Aug. 3, 1951
Hon. Albert Sévigny	Jan. 8, 1917	Earl Alexander of Tunis	Jan. 29, 1952
Hon. Thomas Alexander Crerar	Oct. 12, 1917	Hon. James Sinclair	Oct. 15, 1952
Hon. Henry Herbert Stevens	Sept. 21, 1921	Hon. Ralph Osborne Campney	Oct. 15, 1952
Hon. Edward James McMurray	Nov. 14, 1923	Hon. William Ross Macdonald	May 12, 1953
Rt. Hon. Charles Vincent Massey	Sept. 16, 1925	Hon. George Alexander Drew	May 12, 1953
Hon. William Daum Euler	Sept. 25, 1926	Hon. John Whitney Pickersgill	June 12, 1953
H.R.H. The Duke of Windsor	Aug. 2, 1927	Rt. Hon. Thibaudeau Rinfret	Sept. 16, 1953
Hon. Arthur Charles Hardy	July 31, 1930	Hon. Jean Lesage	Sept. 17, 1953
Hon. Donald Matheson Sutherland	Aug. 7, 1930	Hon. Patrick Kerwin	July 1, 1954
Hon. Thomas Gerow Murphy	Aug. 7, 1930	Hon. George Carlyle Marler	July 1, 1954
Hon. William Duncan Herridge	June 17, 1931	Hon. Roch Pinard	July 1, 1954
Hon. Samuel Gobeil	Aug. 14, 1935	Hon. Herbert J. Symington	Nov. 26, 1956
Hon. William Earl Rowe	Aug. 30, 1935	Hon. Louis René Beaudoin	Apr. 15, 1957
Hon. Onésime Gagnon	Aug. 30, 1935	Hon. Paul Theodore Hellyer	Apr. 26, 1957
Hon. Charles Gavan Power	Oct. 23, 1935	Rt. Hon. John George Diefenbaker[2]	June 21, 1957
Rt. Hon. James Lorimer Ilsley	Oct. 23, 1935	Hon. Howard Charles Green[3]	June 21, 1957
Hon. Joseph Enoil Michaud	Oct. 23, 1935	Hon. Donald Methuen Fleming[3]	June 21, 1957
Rt. Hon. James Garfield Gardiner	Nov. 4, 1935	Hon. Alfred Johnson Brooks	June 21, 1957
Hon. Colin William George Gibson	July 8, 1940	Hon. George Hees[3]	June 21, 1957
Hon. Joseph Thorarinn Thorson	June 11, 1941	Hon. Léon Balcer[3]	June 21, 1957
Hon. William Ferdinand Alphonse Turgeon	Oct. 8, 1941	Hon. George Randolph Pearkes	June 21, 1957
Rt. Hon. Louis Stephen St. Laurent	Dec. 10, 1941	Hon. Gordon Churchill[3]	June 21, 1957
Rt. Hon. Sir Winston Leonard Spencer Churchill	Dec. 29, 1941	Hon. Edmund Davie Fulton[3]	June 21, 1957
Hon. Alphonse Fournier	Oct. 7, 1942	Hon. George Clyde Nowlan[3]	June 21, 1957
Hon. Andrew George Latta McNaughton	Nov. 2, 1944	Hon. Douglas Scott Harkness[3]	June 21, 1957
Hon. Joseph Arthur Jean	Apr. 18, 1945	Hon. Ellen Louks Fairclough[3]	June 21, 1957
Hon. Lionel Chevrier	Apr. 18, 1945	Hon. J. Angus MacLean[3]	June 21, 1957
Hon. Paul Joseph James Martin	Apr. 18, 1945	Hon. Michael Starr[3]	June 21, 1957
Hon. Douglas Charles Abbott	Apr. 18, 1945	Hon. William McLean Hamilton[3]	June 21, 1957
Hon. James Joseph McCann	Apr. 18, 1945	Hon. James MacKerras Macdonnell	June 21, 1957
Hon. Thomas Vien	July 19, 1945	Hon. William J. Browne[3]	June 21, 1957
Hon. Wishart McLea Robertson	Sept. 4, 1945	Hon. Paul Comtois[3]	Aug. 7, 1957
Hon. Milton Fowler Gregg	Sept. 2, 1947	Hon. Jay Waldo Monteith[3]	Aug. 22, 1957
Hon. Robert Wellington Mayhew	June 11, 1948	Hon. Francis Alvin George Hamilton[3]	Aug. 22, 1957
Hon. Lester Bowles Pearson	Sept. 10, 1948	Hon. John Thomas Haig	Oct. 9, 1957
Hon. Stuart Sinclair Garson	Nov. 15, 1948	H.R.H. The Prince Philip, Duke of Edinburgh	Oct. 14, 1957
Hon. Robert Henry Winters	Nov. 15, 1948	Hon. Raymond Joseph Michael O'Hurley[3]	May 12, 1958
Hon. Frederick Gordon Bradley	Apr. 1, 1949	Hon. Henri Courtemanche	May 12, 1958
Hon. Charles Jost Burchell	Apr. 1, 1949	Hon. David James Walker[3]	Aug. 20, 1959
Hon. Gaspard Fauteux	May 16, 1949	Hon. Joseph Pierre Albert Sévigny[3]	Aug. 20, 1959
Hon. Hugues Lapointe	Aug. 25, 1949	Hon. Hugh John Flemming[3]	Oct. 11, 1960
Hon. Gabriel Édouard Rinfret	Aug. 25, 1949	Hon. Noël Dorion[3]	Oct. 11, 1960
Hon. Walter Edward Harris	Jan. 18, 1950	Hon. Walter Dinsdale[3]	Oct. 11, 1960
Hon. George Prudham	Dec. 13, 1950	Hon. George Ernest Halpenny[3]	Oct. 11, 1960
		Hon. Robert Henry McGregor	Dec. 21, 1960

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[1] Members of Her Majesty's Privy Council for Canada take rank *inter se* according to the dates of their being sworn in. [2] Ranks as the Prime Minister of Canada. [3] Ranks as a Member of the Cabinet.

7.—Duration and Sessions of Parliaments, 1945-60

NOTE.—Similar information for the 1st to the 12th Parliaments, covering the period from Confederation to 1917, is given in the 1940 Year Book, p. 46; that for the 13th to 17th Parliaments in the 1945 edition, p. 53; and for the 18th and 19th Parliaments in the 1957-58 edition, p. 46.

Order of Parliament	Session	Date of Opening	Date of Prorogation	Days of Session	Sitting Days of House of Commons	Date of Election, Writs Returnable, Dissolution, and Length of Parliament[1,2]
20th Parliament.....	1st	Sept. 6, 1945	Dec. 18, 1945	104	76	June 11, 1945[3] Aug. 9, 1945[4] Apr. 30, 1949[5] 3 y., 8 m., 22 d.
	2nd	Mar. 14, 1946	Aug. 31, 1946	171	118	
	3rd	Jan. 30, 1947	July 17, 1947	169	115	
	4th	Dec. 5, 1947	June 30, 1948	209	119	
	5th	Jan. 26, 1949	Apr. 30, 1949	95	59	
21st Parliament......	1st	Sept. 15, 1949	Dec. 10, 1949	87	64	June 27, 1949[3] Aug. 25, 1949[4] June 13, 1953[5] 3 y., 9 m., 20 d.
	2nd	Feb. 16, 1950	June 30, 1950	135	90	
	3rd	Aug. 29, 1950	Jan. 29, 1951	154	17	
	4th	Jan. 30, 1951	Oct. 9, 1951	253	105	
	5th	Oct. 9, 1951	Dec. 29, 1951	82	56	
	6th	Feb. 28, 1952	Nov. 20, 1952	267	87	
	7th	Nov. 20, 1952	May 14, 1953	176	108	
22nd Parliament.....	1st	Nov. 12, 1953	June 26, 1954	227	139	Aug. 10, 1953[3] Oct. 8, 1953[4] Apr. 12, 1957[5] 3 y., 6 m., 5 d.
	2nd	Jan. 7, 1955	July 28, 1955	203	140	
	3rd	Jan. 10, 1956	Aug. 14, 1956	218	152	
	4th	Nov. 26, 1956	Jan. 8, 1957	44[6]	5	
	5th	Jan. 8, 1957	Apr. 12, 1957	95	71	
23rd Parliament......	1st	Oct. 14, 1957	Feb. 1, 1958	111	78	June 10, 1957[3] Aug. 8, 1957[4] Feb. 1, 1958[5] 5 m., 25 d.
24th Parliament.....	1st	May 12, 1958	Sept. 6, 1958	117	93	Mar. 31, 1958[3] Apr. 30, 1958[4]
	2nd	Jan. 15, 1959	July 18, 1959	185	127	
	3rd	Jan. 14, 1960	Aug. 10, 1960	210	146	
	4th	Nov. 17, 1960	...	...	...	

[1] The ordinary legal limit of duration for each Parliament is five years. [2] Duration of Parliament in years, months and days. The life of a Parliament is counted from the date of return of election writs to the date of dissolution, both days inclusive (B.N.A. Act, Sect. 50). [3] Date of general election. [4] Writs returnable. [5] Dissolution of Parliament. [6] Includes long adjournment from Nov. 29, 1956 to Jan. 8, 1957.

Subsection 2.—The Legislature

The federal legislative authority is vested in the Parliament of Canada consisting of the Queen, an Upper House styled the Senate, and the House of Commons. Bills may originate in either the Senate or the House subject to the provisions of Sect. 53 of the British North America Act, 1867, which provides that Bills for the appropriation of any part of the public revenue or the imposition of any tax or impost shall originate in the House of Commons. Bills must pass both Houses and receive Royal Assent before becoming law. In practice most public Bills originate in the House of Commons, although there has been a marked increase recently in the introduction of public Bills in the Senate, at the instance of the Government, in order that Bills may be dealt with in the Senate while the Commons is engaged in other matters such as the debate on the Speech from the Throne. Private Bills usually originate in the Senate. The Senate may delay, amend or even refuse to pass Bills sent to it from the Commons, but differences are usually settled without serious conflict. (See Chap. XXVI for current legislation.)

Under Sect. 91 of the British North America Acts, 1867-1952, the legislative authority of the Parliament of Canada extends to the following matters: the amendment of the Constitution of Canada (subject to certain exceptions); the public debt and property; the regulation of trade and commerce; unemployment insurance; the raising of money by any mode or system of taxation; the borrowing of money on the public credit; postal service; the Census and statistics; militia, military and naval service, and defence; the fixing of and providing for the salaries and allowances of civil and other officers of the Government of Canada; beacons, buoys, lighthouses and Sable Island; navigation and shipping; quarantine and the establishment and maintenance of marine hospitals; sea coast and inland fisheries; ferries between a province and any British or foreign country or between two provinces; currency and coinage, banking, incorporation of banks and the issue of paper money; savings banks; weights and measures; bills of exchange and promissory notes; interest; legal tender; bankruptcy and insolvency; patents of invention and discovery; copyrights; Indians and lands reserved for the Indians; naturalization and aliens; marriage and divorce; the criminal law, except the constitution of courts of criminal jurisdiction, but including the procedure in criminal matters; the establishment, maintenance and management of penitentiaries; such classes of subjects as are expressly excepted in the enumeration of the classes of subjects by these Acts assigned exclusively to the legislatures of the provinces.

Under Sect. 95, the Parliament of Canada may make laws in relation to agriculture and immigration concurrently with provincial legislatures although federal legislation is paramount in the event of conflict. By the British North America Act, 1951 (U.K. Stat. 1950-51, c. 32) it is declared that the Parliament of Canada might make laws in relation to old age pensions in Canada but no such law shall affect the operation of any provincial laws in relation to old age pensions.

The Senate.—From an original membership of 72 at Confederation, the Senate, through the addition of new provinces and the general growth of population, now has 102 members, the latest change in representation having been made on the admission of Newfoundland to Confederation in 1949. The growth of representation in the Senate is traced in the 1940 Year Book, pp. 47-49, and is summarized by provinces in Table **8.**

8.—Representation in the Senate since Confederation, 1867

Province	1867	1870	1871	1873	1882	1887	1892	1903	1905	1915-1948	1949-1961
Ontario	24	24	24	24	24	24	24	24	24	24	24
Quebec	24	24	24	24	24	24	24	24	24	24	24
Atlantic Provinces	24	24	24	24	24	24	24	24	24	24	30
Nova Scotia	*12*	*12*	*12*	*10*	*10*	*10*	*10*	*10*	*10*	*10*	*10*
New Brunswick	*12*	*12*	*12*	*10*	*10*	*10*	*10*	*10*	*10*	*10*	*10*
Prince Edward Island	...	...	...	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*
Newfoundland	...	...	...	...	...	...	...	...	...	...	*6*
Western Provinces	...	2	5	5	6	8	9	11	15	24	24
Manitoba	...	*2*	*2*	*2*	*3*	*3*	*4*	*4*	*4*	*6*	*6*
British Columbia	...	...	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*6*	*6*
Saskatchewan	...	...	...	...	...	*2*	*2*	*4*	*4*	*6*	*6*
Alberta									*4*	*6*	*6*
Totals	**72**	**74**	**77**	**77**	**78**	**80**	**81**	**83**	**87**	**96**	**102**

Senators are appointed for life by the Governor General by instrument under the Great Seal of Canada on the recommendation of the Prime Minister. The actual power of appointing Senators resides by constitutional usage in the Prime Minister whose advice the Governor General accepts in this regard. In each of the four main divisions of Canada, except Quebec, Senators represent the whole of the province for which they are appointed; in Quebec one Senator is appointed for each of the 24 electoral divisions of what was formerly Lower Canada. The deliberations of the Senate are presided over by a Speaker appointed by the Governor General in Council (in effect by the Government) and government business in the Senate is sponsored by the Government Leader in the Senate.

The Senate is not a competitor of the House of Commons in the field of legislation, but, in the main, acts as a second chamber giving further scrutiny to legislation initiated in the House of Commons. Under the Constitution, Bills for appropriating any part of the public revenue or for imposing a tax or impost must originate in the Commons but in every other respect, since both Houses must concur in every piece of legislation, the Senate has an equal voice with the House of Commons.

9.—Members of the Senate, by Province, as at Jan. 1, 1961[1]

Speaker.......................................Hon. Mark Robert Drouin
Leader of the Government..........................Hon. Walter M. Aseltine
Leader of the Opposition..........................Hon. William Ross Macdonald
Clerk of the Senate and Clerk of the Parliaments......John Forbes MacNeill

(Ranked according to seniority, by province. All Senators are entitled to the designation "Honourable".)

Province and Name of Senator	P.O. Address
Newfoundland—	
(6 Senators)	
Baird, Alexander Boyd	St. John's
Petten, Ray	St. John's
Pratt, Calbert C.	St. John's
Basha, Michael G.	Curling
Bradley, Frederick Gordon	Bonavista
Higgins, John G.	St. John's
Prince Edward Island—	
(4 Senators)	
Grant, Thomas Vincent	Montague
Barbour, George H.	Charlottetown
Inman, F. Elsie	Montague
MacDonald, John J.	Charlottetown
Nova Scotia—	
(10 Senators)	
Quinn, Felix Patrick	Bedford
Robertson, Wishart McLea	Truro
Kinley, John James	Lunenburg
McDonald, John Alexander	Halifax
Comeau, Joseph Willie	Comeauville
Isnor, Gordon B.	Halifax
Smith, Donald	Liverpool
Connolly, Harold	Halifax
Blois, Frederick M.	Truro
MacDonald, John M.	North Sydney
New Brunswick—	
(10 Senators)	
Veniot, Clarence Joseph	Bathurst
McLean, Alexander Neil	Saint John
Burchill, George Percival	South Nelson
Fergusson, Muriel McQueen	Fredericton
Léger, Aurel D.	Grand Digue
McGrand, Fred A.	Fredericton Junction
Savoie, Calixte F.	Moncton
Taylor, Austin Claude	Salisbury
Emerson, Clarence V.	Saint John
Brooks, Alfred J.	Sussex
Quebec—	
(24 Senators)	
Raymond, Donat	Montreal
Hugessen, Adrian Knatchbull	Montreal
Howard, Charles Benjamin	Sherbrooke
Gouin, Léon Mercier	Montreal
Vien, Thomas	Outremont
Bouchard, Télesphore Damien	St. Hyacinthe
Vaillancourt, Cyrille	Lévis
Dupuis, Vincent	Montreal
Dessureault, Jean Marie	Quebec
Bouffard, Paul Henri	Quebec
Jodoin, Mariana Beauchamp	Montreal
Tremblay, Leonard D. Sweezey	St. Malachie
Fournier, Sarto	Montreal
Molson, H. de M.	Montreal
Power, C. G.	Quebec
Pouliot, Jean François	Rivière du Loup
Bois, Henri Charles	St. Bruno, Chambly Co.
Lefrançois, J. Eugène	Montreal
Drouin, Mark Robert	Quebec
Methot, Léon	Trois Rivières
Monette, Gustave	Montreal
Courtemanche, Henri	Mont Laurier
Quart, Josie A.	Sillery
Beaubien, Louis P.	Montreal
Ontario—	
(24 Senators)	
Hardy, Arthur Charles	Brockville
Wilson, Cairine Reay	Ottawa
Lambert, Norman Platt	Ottawa
Hayden, Salter Adrian	Toronto
Patterson, Norman McLeod	Fort William
Euler, William Daum	Kitchener
Davies, William Rupert	Toronto
Campbell, Gordon Peter	Toronto
Taylor, William Horace	Brantford
Bishop, Charles Lawrence	Ottawa
Roebuck, Arthur Wentworth	Toronto
Farquhar, Thomas	Little Current
Fraser, William Alexander	Trenton
Goulding, William Henry	Seaforth
Woodrow, Allan L.	Toronto
Macdonald, William Ross	Brantford
Bradette, Joseph Arthur	Cochrane
Connolly, John J.	Ottawa
Croll, David A.	Toronto
Leonard, T. D'Arcy	Toronto
White, George Stanley	Madoc
Sullivan, Joseph A.	Toronto
Brunt, William R.	Hanover
Choquette, Lionel	Ottawa
Manitoba—	
(6 Senators)	
Haig, John Thomas	Winnipeg
Beaubien, Arthur Lucien	St. Jean Baptiste
Crerar, Thomas Alexander	Winnipeg
Wall, William M.	Winnipeg
Thorvaldson, Gunnar S.	Winnipeg
Irvine, Olive L.	Winnipeg
Saskatchewan—	
(6 Senators)	
Horner, Ralph Byron	Blaine Lake
Aseltine, Walter Morley	Rosetown
Wood, Thomas H.	Regina
Boucher, William Albert	Prince Albert
Pearson, Arthur M.	Lumsden
Hnatyshyn, John	Saskatoon
Alberta—	
(6 Senators)	
Blais, Aristide	Edmonton
Gershaw, Fred William	Medicine Hat
Stambaugh, J. Wesley	Bruce
Cameron, Donald	Edmonton
Gladstone, James	Cardston
Buchanan, John A.	Edmonton
British Columbia—	
(6 Senators)	
Farris, John Wallace de Beque	Vancouver
Turgeon, James Gray	Vancouver
McKeen, Stanley Stewart	Vancouver
Reid, Thomas	New Westminster
Hodges, Nancy	Victoria
Smith, Sidney John	Kamloops

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[1] Any changes occurring between Jan. 1, 1961 and the date of going to press will be carried in an Appendix to this volume.

The House of Commons.—The British North America Act, 1867 provided that in respect of representation in the House of Commons the Province of Quebec should have the fixed number of sixty-five members and that there should be assigned to each of the other provinces such a number of members as would bear the same proportion to the number of its population as the number sixty-five bears to the number of the population of Quebec. This Act also provided that on the completion of a census in 1871 and of each subsequent decennial census the representation of the several provinces should be readjusted from time to time provided the proportionate representation of the provinces as prescribed by the Act were not thereby disturbed.

In the session of 1946 the House of Commons adopted a resolution stating that the effect of the provisions of the British North America Act relating to representation had not been satisfactory in that proportionate representation of the provinces according to population had not been maintained and that a more equitable apportionment of members to the various provinces could be effected if readjustments were made on the basis of the population of all the provinces taken as a whole. The Act was amended accordingly in 1946 to provide a new rule to regulate representation in the House of Commons. Generally speaking, representation was fixed as follows:—

> The membership assigned to each province shall be computed by dividing the total population of the provinces by two hundred and fifty-four and by dividing the population of each province by the quotient so obtained.

This rule, employed in the redistribution of representation made in 1947, was effective in the General Election of 1949.

After the completion of the 1951 Census it was apparent that as a result of a wartime shift of population a substantial reduction in the representation of the Province of Saskatchewan would ensue under the rules then regulating representation. Accordingly, in an effort to eliminate sharp reductions in provincial representation from one census to another, the British North America Act was again amended to provide representation on the following basis:—

> "Sect. 51.—(1) Subject as hereinafter provided, the number of members of the House of Commons shall be two hundred and sixty-three and the representation of the provinces therein shall forthwith upon the coming into force of this section and thereafter on the completion of each decennial census be readjusted by such authority, in such manner, and from such time as the Parliament of Canada from time to time provides, subject and according to the following rules:—
>
> "1. There shall be assigned to each of the provinces a number of members computed by dividing the total population of the provinces by two hundred and sixty-one and by dividing the population of each province by the quotient so obtained, disregarding, except as hereinafter in this section provided, the remainder, if any, after the said process of division.
>
> "2. If the total number of members assigned to all the provinces pursuant to rule one is less than two hundred and sixty-one, additional members shall be assigned to the provinces (one to a province) having remainders in the computation under rule one commencing with the province having the largest remainder and continuing with the other provinces in the order of the magnitude of their respective remainders until the total number of members assigned is two hundred and sixty-one.
>
> "3. Notwithstanding anything in this section, if upon completion of a computation under rules one and two, the number of members to be assigned to a province is less than the number of senators representing the said province, rules one and two shall cease to apply in respect of the said province, and there shall be assigned to the said province a number of members equal to the said number of senators.
>
> "4. In the event that rules one and two cease to apply in respect of a province then, for the purpose of computing the number of members to be assigned to the provinces in respect of which rules one and two continue to apply, the total population of the provinces shall be reduced by the number of the population of the province in respect of which rules one and two have ceased to apply and the number two hundred and sixty-one shall be reduced by the number of members assigned to such province pursuant to rule three.
>
> "5. On any such readjustment the number of members for any province shall not be reduced by more than fifteen per cent below the representation to which such province was entitled under rules one to four of this subsection at the last preceding readjustment of the representation of that province, and there shall be no reduction in the representation of any province as a result of which that province would have a smaller number of members

> than any other province that according to the results of the then last decennial census did not have a larger population; but for the purposes of any subsequent readjustment of representation under this section any increase in the number of members of the House of Commons resulting from the application of this rule shall not be included in the divisor mentioned in rules one to four of this subsection.
>
> "6. Such readjustment shall not take effect until the termination of the then existing Parliament.
>
> "(2) The Yukon Territory as constituted by chapter forty-one of the Statutes of Canada, 1901, shall be entitled to one member, and such other part of Canada not comprised within a province as may from time to time be defined by the Parliament of Canada shall be entitled to one member." (RSC 1952, c. 304.)

The principal effect of these latest rules is that the representation of any province shall not be reduced by more than 15 p.c. at any one readjustment, subject however to the qualification that the rule shall not work out in such manner that the representation of a province with a smaller population shall be greater than any province with a larger population.

Subsequently, Parliament enacted a measure, "An Act to readjust the Representation in the House of Commons, 1952", effective in the General Election of 1953, which provided that representation in the House of Commons shall be on the following basis:—

> "Sect. 2.—Eighty-five members of the House of Commons shall be elected for the Province of Ontario, seventy-five for the Province of Quebec, twelve for the Province of Nova Scotia, ten for the Province of New Brunswick, fourteen for the Province of Manitoba, twenty-two for the Province of British Columbia, four for the Province of Prince Edward Island, seventeen for the Province of Saskatchewan, seventeen for the Province of Alberta, seven for the Province of Newfoundland, one for the Yukon Territory and one for Mackenzie district of the Northwest Territories, thus making a total of two hundred and sixty-five members." (RSC 1952, c. 334.)

The number of representatives of each province elected at each of the 23 General Elections since Confederation is given in Table **10**.

10.—Representation in the House of Commons, as at Federal General Elections 1867-1958

Province or Territory	1867	1872	1874 1878	1882	1887 1891	1896 1900	1904	1908 1911	1917 1921	1925 1926 1930	1935 1940 1945	1949	1953 1957 1958
Ontario	82	88	88	92	92	92	86	86	82	82	82	83	85
Quebec	65	65	65	65	65	65	65	65	65	65	65	73	75
Nova Scotia	19	21	21	21	21	20	18	18	16	14	12	13	12
New Brunswick	15	16	16	16	16	14	13	13	11	11	10	10	10
Manitoba	...	4	4	5	5	7	10	10	15	17	17	16	14
British Columbia	...	6	6	6	6	6	7	7	13	14	16	18	22
Prince Edward Island	...	...	6	6	6	5	4	4	4	4	4	4	4
Saskatchewan	...	...	...	...	4	4	10	10	16	21	21	20	17
Alberta	...	...	...	...				7	12	16	17	17	17
Yukon	...	...	...	...	...	...	1	1	1	1	1	1	1
Mackenzie River, N.W.T.													1
Newfoundland	...	...	...	...	...	...	...	...	...	...	...	7	7
Totals	**181**	**200**	**206**	**211**	**215**	**213**	**214**	**221**	**235**	**245**	**245**	**262**	**265**

Under their parliamentary system of representation, based on a "constitution similar in principle to that of the United Kingdom", the people of Canada elect representatives having various political party affiliations as shown in Table **11**. In a general election, the Canadian electorate not only determines what political party leader shall be called on to form the Government of the day, but it also decides which of the parties is to become the Official Opposition. Her Majesty's Loyal Opposition occupies an essential place in constitutions based on the British parliamentary system, in that its function is to oppose or criticize in debate the Government in power—an essential to good government at all times. The Official Opposition is founded, like such institutions as the Cabinet and the Prime Ministership, on unwritten custom that has become firmly established. Although the position of Leader of the Opposition is not recognized in the British North America Act, it received statutory acknowledgment in the Canadian Parliament in 1905 when the

Senate and House of Commons Act (SC 1905, c. 43, Sect. 2) provided an additional sessional allowance to "the member occupying the recognized position of Leader of the Opposition in the House of Commons".

11.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Fourth General Election, Mar. 31, 1958, and Revised to Jan. 1, 1961.[1]

Speaker.......................................Hon. Roland Michener
Prime Minister..............................Rt. Hon. John George Diefenbaker
Leader of the Opposition...................Hon. Lester B. Pearson
Clerk of the House of Commons............Léon J. Raymond

Note.—The vote is summarized by provinces in Table 13, p. 74. The leaders of the political parties are indicated by asterisks (*). This information, except the population of constituencies, has been supplied by the Chief Electoral Officer. Party affiliations are unofficial. P.C.=Progressive Conservative; Lib.=Liberal; C.C.F. =Co-operative Commonwealth Federation; L.-Lab.=Liberal-Labour.

Province and Electoral District	Population, Census 1956	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
Newfoundland— (7 members)							
Bonavista-Twillingate	48,354	24,349	18,117	13,670	Hon. J. W. Pickersgill	Ottawa, Ont.	Lib.
Burin-Burgeo	46,362	21,624	16,318	11,360	C. W. Carter	St. John's	Lib.
Grand Falls-White Bay-Labrador	71,416	35,034	26,649	16,328	C. R. Granger	St. John's	Lib.
Humber-St. George's	64,683	29,101	23,924	13,468	H. M. Batten	Corner Brook	Lib.
St. John's East	66,132	33,998	27,585	17,894	J. A. McGrath	St. John's	P.C.
St. John's West	62,921	32,947	26,706	15,953	Hon. W. J. Browne	St. John's	P.C.
Trinity-Conception	55,206	27,725	21,629	12,599	J. R. Tucker	St. John's	Lib.
Prince Edward Island— (4 members)							
Kings	17,853	9,956	8,965	5,018	J. A. Macdonald	Cardigan	P.C.
Prince	38,007	19,314	17,383	10,444	O. H. Phillips	Alberton	P.C.
Queens	43,425	24,930	42,954	13,969 13,480	Hon. J. A. MacLean H. Macquarrie	Beaton's Mills Victoria	P.C. P.C.
Nova Scotia— (12 members)							
Antigonish-Guysborough	26,878	14,757	12,662	6,758	C. O'Leary	Antigonish	P.C.
Cape Breton North and Victoria	46,874	24,283	20,841	12,046	R. Muir	Sydney Mines	P.C.
Cape Breton South	83,152	43,879	38,740	17,636	D. MacInnis	Glace Bay	P.C.
Colchester-Hants	59,529	33,298	28,831	15,653	C. F. Kennedy	Truro	P.C.
Cumberland	39,598	22,688	19,017	11,379	R. C. Coates	Amherst	P.C.
Digby-Annapolis-Kings	71,076	39,163	33,621	19,432	Hon. G. C. Nowlan	Wolfville	P.C.
Halifax	197,943	112,253	179,287	53,693 53,255	R. McCleave E. Morris	Halifax Halifax	P.C. P.C.
Inverness-Richmond	32,833	19,064	15,518	7,725	R. S. MacLellan	Portage, Cape Breton	P.C.
Pictou	44,566	25,638	22,649	13,618	R. MacEwan	New Glasgow	P.C.
Queens-Lunenburg	46,981	29,355	24,905	14,156	L. R. Crouse	Lunenburg	P.C.
Shelburne-Yarmouth-Clare	45,287	25,818	22,408	12,071	F. F. Legere	Pinkney's Point	P.C.
New Brunswick— (10 members)							
Charlotte	24,497	13,965	12,379	6,448	R. D. C. Stewart	St. George	P.C.
Gloucester	64,119	28,326	25,025	13,112	H. J. Robichaud	Caraquet	Lib.
Kent	27,492	12,949	11,236	6,118	H. J. Michaud	Buctouche	Lib.
Northumberland-Miramichi	47,223	22,862	19,665	10,206	G. R. McWilliam	Newcastle	Lib.

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[1] Any changes in membership occurring between Jan. 1, 1961 and the date of going to press will be carried in an Appendix to this volume.

11.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Fourth General Election, Mar. 31, 1958, and Revised to Jan. 1, 1961—continued.

Province and Electoral District	Population, Census 1956	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
New Brunswick—concl.							
Restigouche-Madawaska	76,708	35,342	30,956	17,221	J. C. Van Horne	Campbellton	P.C.
Royal	37,105	21,126	17,673	10,483	Hon. A. J. Brooks[1]	Sussex	P.C.
Saint John-Albert	92,335	54,781	42,782	27,049	T. M. Bell	Saint John	P.C.
Victoria-Carleton	42,093	22,083	17,961	10,692	G. W. Montgomery	Woodstock	P.C.
Westmorland	85,414	48,565	42,107	20,149	W. L. M. Creaghan	Moncton	P.C.
York-Sunbury	57,630	34,388	29,922	15,943	J. C. MacRae	Fredericton	P.C.
Quebec—(75 members)							
Argenteuil - Deux - Montagnes	55,069	30,486	25,889	14,483	J. O. Latour	St. Benoit	P.C.
Beauce	59,290	28,585	24,773	10,417	J. P. Racine	St. Honoré de Shenley	Lib.
Beauharnois-Salaberry	53,811	31,939	25,883	13,202	G. Bruchési	Ville de Léry	P.C.
Bellechasse	32,546	15,842	13,204	6,861	N. Dorion	Ste. Foy	P.C.
Berthier - Maskinongé-Delanaudière	47,423	24,879	21,653	12,702	R. Paul	Louiseville	P.C.
Bonaventure	43,240	19,514	16,992	9,135	L. Grenier	New Carlisle	P.C.
Brome-Missisquoi	40,563	22,434	18,575	11,361	H. Grafftey	Knowlton	P.C.
Chambly-Rouville	45,350	25,300	21,362	10,546	M. Johnson	Beloeil	P.C.
Champlain	58,321	30,525	27,156	13,537	P. Lahaye	Batiscan	P.C.
Chapleau	65,456	32,006	24,896	14,705	J. J. Martel	Amos	P.C.
Charlevoix	47,430	23,479	20,447	12,315	M. Asselin	La Malbaie	P.C.
Châteauguay-Huntingdon-Laprairie	52,413	28,040	22,033	12,365	M. E. Barrington	Ormstown	P.C.
Chicoutimi	70,668	34,437	30,659	15,407	V. Brassard	Chicoutimi	P.C.
Compton-Frontenac	44,048	20,844	18,171	9,383	G. M. Stearns	Lac Mégantic	P.C.
Dorchester	38,737	18,375	16,014	8,766	N. Drouin	St. Maxime de Scott	P.C.
Drummond-Arthabaska	83,407	41,685	35,316	17,288	S. Boulanger	Victoriaville	Lib.
Gaspé	63,941	28,994	24,978	14,535	R. L. English	Rivière au Renard	P.C.
Gatineau	48,721	25,625	20,935	10,840	R. Leduc	Maniwaki	Lib.
Hull	76,231	41,923	36,238	20,132	A. Caron	Hull	Lib.
Îles-de-la-Madeleine	11,556	5,191	4,755	2,471	J.-R. Keays	Gaspé	P.C.
Joliette-L'Assomption-Montcalm	87,101	46,600	37,561	21,821	L.-J. Pigeon	Joliette	P.C.
Kamouraska	35,907	18,038	14,683	7,691	C. Richard	Ste. Anne de la Pocatière	P.C.
Labelle	43,705	21,609	18,440	10,606	Hon. H. Courtemanche[2]	Mont Laurier	P.C.
Lac-Saint-Jean	42,918	19,931	17,813	8,255	R. Parizeau	Alma	P.C.
Lapointe	68,106	33,701	29,222	12,113	A. Brassard	Jonquière	Lib.
Lévis	44,284	25,135	21,806	12,410	M. Bourget	Lévis	Lib.
Longueuil	85,540	48,560	37,829	18,637	Hon. J. P. A. Sévigny	Westmount	P.C.
Lotbinière	38,625	18,521	16,182	9,610	Hon. R. O'Hurley	St. Gilles	P.C.
Matapédia-Matane	67,441	29,752	25,581	14,969	A. Belzile	St. Léon le Grand	P.C.
Mégantic	64,958	31,569	26,942	13,486	G. Roberge	Thetford Mines	Lib.
Montmagny-L'Islet	39,840	20,173	16,777	8,689	Hon. J. Lesage[3]	Quebec	Lib.
Nicolet-Yamaska	45,880	23,515	19,231	11,880	Hon. P. Comtois	Pierreville	P.C.
Pontiac-Témiscamingue	42,432	20,628	17,423	8,842	P. Martineau	Campbell's Bay	P.C.
Portneuf	46,976	25,580	21,627	11,386	A. Rompré	St. Ubald	P.C.
Quebec East	87,323	52,622	45,397	22,285	Y. R. Tassé	Sillery	P.C.
Quebec South	54,949	37,616	31,683	15,771	J. Flynn	Quebec	P.C.
Quebec West	55,413	32,338	27,924	14,223	J. E. Bissonnette	St. Vallier Ouest	P.C.
Québec-Montmorency	98,331	53,501	46,471	25,394	R. Lafrenière	Ste. Foy	P.C.
Richelieu-Verchères	53,068	29,394	24,738	13,497	L.-J.-L. Cardin	Ste. Anne de Sorel	Lib.
Richmond-Wolfe	57,963	29,305	23,990	11,984	V.-F. Dubois	Asbestos	P.C.
Rimouski	70,683	33,759	28,657	16,426	E. Morissette	Mont Joli	P.C.
Roberval	52,980	23,342	19,984	10,696	J. N. Tremblay	St. André	P.C.
Saint-Hyacinthe-Bagot	58,517	32,557	26,947	15,761	T. Ricard	St. Hyacinthe	P.C.
Saint-Jean-Iberville-Napierville	57,871	30,739	26,826	14,332	Y. Dupuis	St. Jean	Lib.
Saint-Maurice-Laflèche	79,451	43,873	35,059	18,556	J.-A. Richard	Shawinigan	Lib.

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[1] Resigned Sept. 12, 1960; appointed to the Senate Sept. 12, 1960; see Table 12 for by-election. [2] Resigned Jan. 19, 1960; appointed to the Senate Jan. 20, 1960; see Table 12 for by-election. [3] Resigned June 11, 1958 to assume leadership of the Liberal Party in Quebec; see Table 12 for by-election.

11.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Fourth General Election, Mar. 31, 1958, and Revised to Jan. 1, 1961—continued.

Province and Electoral District	Population, Census 1956	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
Quebec—concluded							
Saguenay	56,655	32,282	24,820	13,194	P. LaRue	Baie Comeau	P.C.
Shefford	60,388	31,755	26,215	13,001	M. Boivin	Granby	Lib.
Sherbrooke	64,463	36,975	30,362	15,383	M. Allard	Sherbrooke	P.C.
Stanstead	41,348	22,454	18,659	10,363	R. Létourneau	Stanstead Plain	P.C.
Témiscouata	58,424	26,927	23,379	13,361	A. Fréchette	Cabano	P.C.
Terrebonne	81,895	46,746	37,953	19,319	M. Deschambault	St. Jérôme	P.C.
Trois-Rivières	62,932	36,338	30,505	18,049	Hon. L. Balcer	Trois Rivières	P.C.
Vaudreuil-Soulanges	32,361	18,420	15,558	8,161	M. Bourbonnais	Terrasse Vaudreuil	P.C.
Villeneuve	74,366	34,517	29,067	10,102	A. Dumas	Malartic	Lib.
Island of Montreal and Île Jésus—							
Cartier	48,952	25,907	16,713	7,097	L. D. Crestohl	Montreal	Lib.
Dollard	84,052	51,102	38,820	18,760	G. Rouleau	Montreal	Lib.
Hochelaga	75,004	46,363	32,101	16,706	R. Eudes	Montreal	Lib.
Jacques-Cartier-Lasalle	110,931	70,995	58,922	30,908	J. Pratt	Dorval	P.C.
Lafontaine	50,584	33,355	23,991	12,195	J. G. Ratelle	Montreal	Lib.
Laurier	47,055	29,400	20,046	10,125	Hon. L. Chevrier	Pont Viau	Lib.
Laval	117,525	73,692	55,581	26,076	R. Bourdages	Laval des Rapides	P.C.
Maisonneuve-Rosemont	94,124	62,259	43,720	21,515	J. P. Deschatelets	Montreal	Lib.
Mercier	124,913	76,119	53,256	26,463	A. Gillet	Cité de St. Michel	P.C.
Mount Royal	106,636	66,494	46,113	22,051	A. A. Macnaughton	Montreal	Lib.
Notre-Dame-de-Grâce	93,983	59,476	45,260	27,145	Hon. W. M. Hamilton	Montreal	P.C.
Outremont-Saint-Jean	58,446	34,924	23,220	12,715	R. Bourque	Outremont	Lib.
Papineau	81,066	50,872	35,387	18,466	A. Meunier	Montreal	Lib.
St. Ann	40,783	22,689	16,143	8,289	G. Loiselle	Montreal	Lib.
Saint-Antoine-Westmount	61,800	41,379	30,028	15,882	R. Webster	Westmount	P.C.
Saint-Denis	65,286	40,538	29,080	14,737	A. Denis	Montreal	Lib.
Saint-Henri	68,959	40,643	29,946	11,533	H.-Pit Lessard	Montreal	Lib.
Saint-Jacques	63,653	40,856	25,021	12,798	C.-E. Campeau	Montreal	P.C.
St. Lawrence-St. George	44,510	27,503	17,901	9,702	E. Chambers	Westmount	P.C.
Sainte-Marie	60,539	35,657	22,770	11,635	G. J. Valade	Montreal	P.C.
Verdun	78,262	47,584	35,940	16,357	H. E. Monteith	Verdun	P.C.
Ontario—(85 members)							
Algoma East	40,838	29,196	21,712	11,240	Hon. L. B. Pearson*	Ottawa	Lib.
Algoma West	63,727	34,867	28,852	12,390	G. E. Nixon	Sault Ste. Marie	Lib.
Brantford	51,813	31,065	25,703	14,059	J. Wratten	Brantford	P.C.
Brant-Haldimand	52,246	29,002	23,546	15,182	J. A. Charlton	Paris	P.C.
Bruce	28,658	17,142	14,576	9,510	A. E. Robinson	Kincardine	P.C.
Carleton	92,590	57,412	48,929	32,741	R. A. Bell	Britannia Bay	P.C.
Cochrane	42,720	22,199	17,710	7,851	J. A. Habel	Kapuskasing	Lib.
Dufferin-Simcoe	48,859	24,880	18,967	13,037	Hon. W. E. Rowe	Newton Robinson	P.C.
Durham	35,827	20,980	17,535	9,732	P. Vivian	Port Hope	P.C.
Elgin	59,114	32,954	25,340	17,146	J. A. McBain	St. Thomas	P.C.
Essex East	93,859	52,464	43,588	18,074	Hon. P. Martin	Windsor	Lib.
Essex South	51,613	28,399	23,640	14,326	R. D. Thrasher	Amherstburg	P.C.
Essex West	99,948	55,688	42,173	18,927	N. L. Spencer	Windsor	P.C.
Fort William	51,450	29,129	25,131	9,915	H. Badanai	Fort William	Lib.
Glengarry-Prescott	44,984	24,345	20,400	10,385	O. F. Villeneuve	Maxville	P.C.
Grenville-Dundas	37,541	22,103	15,737	10,793	A. C. Casselman[1]	Prescott	P.C.
Grey-Bruce	36,200	21,686	18,280	11,878	E. A. Winkler	Hanover	P.C.
Grey North	38,183	23,217	19,633	12,240	P. V. Noble	Shallow Lake	P.C.
Halton	68,297	43,467	34,960	21,056	A. Best	Georgetown	P.C.
Hamilton East	67,147	39,537	29,897	15,046	Q. Martini	Hamilton	P.C.
Hamilton South	97,438	58,689	45,777	24,453	R. M. T. McDonald	Hamilton	P.C.
Hamilton West	72,232	42,259	31,094	19,863	Hon. Ellen Fairclough	Hamilton	P.C.
Hastings-Frontenac	46,950	27,096	20,257	13,983	Hon. S. E. Smith[2]	Ottawa	P.C.

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[1] Died May 11, 1958; see Table **12** for by-election.

[2] Died Mar. 17, 1959; see Table **12** for by-election.

11.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Fourth General Election, Mar. 31, 1958, and Revised to Jan. 1, 1961—continued.

Province and Electoral District	Population, Census 1956	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
Ontario—concluded							
Hastings South	62,804	34,830	29,381	17,849	L. Grills	Belleville	P.C.
Huron	46,426	25,311	21,881	14,108	E. Cardiff	Brussels	P.C.
Kenora-Rainy River	67,356	33,138	27,493	11,956	W. M. Benidickson	Kenora	L.-Lab.
Kent	68,212	38,108	31,462	17,348	H. W. Danforth	Blenheim	P.C.
Kingston	65,680	38,701	33,025	16,989	B. Allmark	Kingston	P.C.
Lambton-Kent	41,220	23,583	18,735	12,835	E. J. Campbell	Wallaceburg	P.C.
Lambton West	67,350	37,967	29,509	16,603	J. W. Murphy	Camlachie	P.C.
Lanark	37,903	22,204	16,557	12,116	G. H. Doucett	Carleton Place	P.C.
Leeds	43,199	25,583	22,040	12,675	H. Stanton[1]	Seeley's Bay	P.C.
Lincoln	111,740	64,403	51,627	29,958	J. Smith	St. Catharines	P.C.
London	74,865	46,777	36,399	24,276	G. E. Halpenny	London	P.C.
Middlesex East	78,524	45,085	36,351	24,896	H. O. White	Glanworth	P.C.
Middlesex West	37,508	21,786	18,033	11,974	W. H. A. Thomas	Strathroy	P.C.
Niagara Falls	70,950	40,348	30,956	14,025	W. L. Houck[2]	Niagara Falls	Lib.
Nickel Belt	60,098	29,774	25,363	11,866	O. J. Godin	Sudbury	Lib.
Nipissing	58,258	31,977	26,940	15,046	J. R. Garland	North Bay	Lib.
Norfolk	46,122	25,250	19,970	12,369	J. E. Knowles	Langton	P.C.
Northumberland	38,205	22,897	19,708	12,517	B. Thompson	Brighton	P.C.
Ontario	99,039	58,844	46,611	26,887	Hon. M. Starr	Oshawa	P.C.
Ottawa East	52,473	33,372	28,259	17,161	J. T. Richard	Ottawa	Lib.
Ottawa West	68,255	44,767	37,913	19,098	G. McIlraith	Ottawa	Lib.
Oxford	65,228	36,986	29,714	22,079	W. Nesbitt	Woodstock	P.C.
Parry Sound-Muskoka	52,556	30,517	24,342	14,888	G. H. Aiken	Gravenhurst	P.C.
Peel	83,108	49,934	38,846	23,379	J. Pallett	Port Credit	P.C.
Perth	53,410	32,294	26,245	18,295	Hon. J. W. Monteith	Stratford	P.C.
Peterborough	59,729	36,216	28,818	19,032	G. K. Fraser[3]	Lakefield	P.C.
Port Arthur	78,111	39,784	31,794	12,217	D. M. Fisher	Port Arthur	C.C.F.
Prince Edward-Lennox	35,666	20,342	15,361	10,783	C. A. Milligan	Napanee	P.C.
Renfrew North	45,802	23,543	20,821	10,425	J. M. Forgie	Pembroke	Lib.
Renfrew South	34,403	19,439	17,498	9,259	J. W. Baskin	Renfrew	P.C.
Russell	88,306	50,514	43,380	21,575	J. O. Gour[4]	Casselman	Lib.
Simcoe East	54,006	29,164	24,153	15,149	P. B. Rynard	Orillia	P.C.
Simcoe North	40,754	25,051	19,947	13,855	H. Smith	Barrie	P.C.
Stormont	56,452	31,867	26,637	13,964	G. Campbell	Cornwall	P.C.
Sudbury	67,868	37,631	31,970	16,216	R. Mitchell	Sudbury	Lib.
Timiskaming	49,891	25,420	21,159	7,544	A. Peters	New Liskeard	C.C.F.
Timmins	45,469	23,286	19,493	7,342	M. Martin	Timmins	C.C.F.
Victoria	45,661	28,660	22,580	16,080	C. W. Hodgson	Haliburton	P.C.
Waterloo North	95,256	57,292	45,278	24,526	O. W. M. Weichel	Elmira	P.C.
Waterloo South	53,518	32,330	26,135	15,624	W. Anderson	Galt	P.C.
Welland	78,656	44,365	36,420	15,365	W. H. McMillan	Thorold	Lib.
Wellington-Huron	31,712	18,493	15,666	10,574	M. Howe	Arthur	P.C.
Wellington South	50,928	30,372	25,814	15,160	A. D. Hales	Guelph	P.C.
Wentworth	79,421	47,532	36,778	23,854	F. E. Lennard	Dundas	P.C.
York Centre	127,591	80,081	58,628	30,764	F. C. Stinson	Willowdale	P.C.
York East	73,284	49,428	37,728	22,900	R. H. McGregor	Toronto	P.C.
York-Humber	78,202	51,339	40,008	23,723	Margaret Aitken	Toronto	P.C.
York North	70,595	45,201	34,178	21,499	C. A. Cathers	Newmarket	P.C.
York-Scarborough	167,310	112,628	89,439	57,396	F. McGee	Don Mills	P.C.
York South	105,979	65,785	47,229	22,980	W. G. Beech	Toronto	P.C.
York West	110,050	72,484	57,544	34,208	J. B. Hamilton	Etobicoke	P.C.
City of Toronto—							
Broadview	57,494	34,720	24,296	15,364	Hon. G. Hees	Toronto	P.C.
Danforth	84,617	54,839	41,534	24,139	R. H. Small	Toronto	P.C.
Davenport	62,430	32,641	25,307	12,117	M. D. Morton	Toronto	P.C.
Eglinton	71,271	52,098	41,091	28,565	Hon. D. M. Fleming	Toronto	P.C.
Greenwood	56,637	35,551	26,573	16,284	Hon. J. M. Macdonnell	Toronto	P.C.
High Park	59,850	35,454	27,821	14,289	J. W. Kucherepa	Toronto	P.C.
Parkdale	56,650	34,790	26,456	13,640	A. Maloney	Toronto	P.C.
Rosedale	55,088	33,519	24,826	15,429	Hon. D. J. Walker	Toronto	P.C.
St. Paul's	54,262	40,656	28,590	18,213	Hon. R. Michener	Toronto	P.C.
Spadina	85,490	43,310	29,893	14,616	C. E. Rea	Toronto	P.C.
Trinity	63,801	31,385	22,915	10,203	E. R. Lockyer[5]	Toronto	P.C.

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[1] Died Dec. 8, 1960; results of by-election in Appendix.

[2] Died May 5, 1960; see Table 12 for by-election.

[3] Died May 26, 1960; see Table 12 for by-election.

[4] Died Mar. 24, 1959; see Table 12 for by-election.

[5] Died Oct. 5, 1958; see Table 12 for by-election.

11.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Fourth General Election, Mar. 31, 1958, and Revised to Jan. 1, 1961—continued.

Province and Electoral District	Population, Census 1956	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
Manitoba—							
(14 members)							
Brandon-Souris	62,365	36,921	30,152	22,185	W. G. Dinsdale	Brandon	P.C.
Churchill	48,999	22,856	17,994	11,506	R. Simpson	Flin Flon	P.C.
Dauphin	41,304	22,299	18,835	8,674	R. E. Forbes	Dauphin	P.C.
Lisgar	46,756	25,291	19,703	13,072	G. Muir	Roland	P.C.
Marquette	49,190	26,009	23,015	14,748	N. Mandziuk	Oakburn	P.C.
Portage-Neepawa	55,875	28,338	23,448	15,304	G. C. Fairfield	Portage la Prairie	P.C.
Provencher	40,658	20,220	15,290	8,278	W. H. Jorgenson	Ste. Elizabeth	P.C.
St. Boniface	59,422	34,754	29,033	12,688	L. Régnier	St. Boniface	P.C.
Selkirk	49,047	23,775	18,767	8,878	E. Stefanson	Gimli	P.C.
Springfield	41,814	21,545	16,743	7,045	V. Yacula[1]	Winnipeg	P.C.
Winnipeg North	97,945	59,385	46,833	19,629	M. Smith	Winnipeg	P.C.
Winnipeg North Centre	77,917	44,625	32,445	14,911	J. MacLean	Winnipeg	P.C.
Winnipeg South	98,248	62,091	51,478	32,308	G. Chown	Winnipeg	P.C.
Winnipeg South Centre	80,500	53,443	41,912	27,722	Hon. G. Churchill	Winnipeg	P.C.
Saskatchewan—							
(17 members)							
Assiniboia	46,444	25,446	21,729	9,104	H. R. Argue*	Kayville	C.C.F.
Humboldt-Melfort	49,221	25,644	20,203	9,975	R. Rapp	Spalding	P.C.
Kindersley	47,724	26,043	21,434	8,935	R. L. Hanbidge	Kerrobert	P.C.
Mackenzie	45,971	22,421	17,281	9,138	S. J. Korchinski	Rama	P.C.
Meadow Lake	37,840	17,704	12,922	6,830	A. C. Cadieu	Spiritwood	P.C.
Melville	42,219	22,752	19,925	8,440	J. N. Ormiston	Cupar	P.C.
Moose Jaw-Lake Centre	64,947	37,274	31,627	18,736	J. E. Pascoe	Moose Jaw	P.C.
Moose Mountain	42,897	24,673	20,253	9,287	R. R. Southam	Gainsborough	P.C.
Prince Albert	56,121	28,825	23,107	16,583	Rt. Hon. J. G. Diefenbaker*	Prince Albert	P.C.
Qu'Appelle	39,894	21,168	17,931	10,514	Hon. A. Hamilton	Saskatoon	P.C.
Regina City	81,235	52,182	45,123	24,424	K. H. More	Regina	P.C.
Rosetown-Biggar	45,303	25,619	21,022	9,962	C. O. Cooper	Hawarden	P.C.
Rosthern	48,815	24,000	17,765	8,166	E. Nasserden	Warman	P.C.
Saskatoon	73,154	48,945	40,732	24,622	H. F. Jones	Saskatoon	P.C.
Swift Current-Maple Creek	55,313	31,487	25,823	11,618	J. McIntosh	Swift Current	P.C.
The Battlefords	52,300	26,355	20,430	10,970	A. Horner	Blaine Lake	P.C.
Yorkton	51,267	27,601	22,642	9,882	G. D. Clancy	Raymore	P.C.
Alberta—							
(17 members)							
Acadia	46,105	24,961	19,287	9,669	J. H. Horner	Pollockville	P.C.
Athabasca	56,611	25,778	18,944	9,751	F. J. Bigg	Westlock	P.C.
Battle River-Camrose	57,576	30,103	22,828	13,049	C. S. Smallwood	Irma	P.C.
Bow River	47,454	25,690	20,229	12,695	E. M. Woolliams	Calgary	P.C.
Calgary North	98,777	59,626	43,367	30,930	Hon. D. S. Harkness	Calgary	P.C.
Calgary South	95,245	57,290	42,210	29,482	A. Smith	Calgary	P C.
Edmonton East	70,755	40,322	28,319	15,236	W. Skoreyko	Edmonton	P.C.
Edmonton-Strathcona	91,293	54,429	42,531	25,885	T. Nugent	Edmonton	P.C.
Edmonton West	106,778	61,781	46,763	30,937	M. Lambert	Edmonton	P.C.
Jasper-Edson	62,652	32,339	22,000	12,522	H. M. Horner	Barrhead	P.C.
Lethbridge	62,332	28,764	23,101	13,364	D. R. Gundlock	Warner	P.C.
Macleod	50,177	25,415	20,289	11,911	L. E. Kindt	High River	P.C.
Medicine Hat	56,918	30,150	23,662	10,886	E. W. Brunsden	Brooks	P.C.
Peace River	69,725	34,262	22,800	13,328	G. W. Baldwin	Peace River	P.C.
Red Deer	52,075	28,614	21,311	11,569	H. Rogers	Red Deer	P.C.
Vegreville	45,322	23,641	17,091	7,918	F. J. W. Fane	Mundare	P.C.
Wetaskiwin	53,321	25,655	18,245	10,557	J. S. Speakman	Wetaskiwin	P.C.
British Columbia—							
(22 members)							
Burnaby-Coquitlam	67,202	39,681	30,179	12,917	E. Regier	East Burnaby	C.C.F.
Burnaby-Richmond	73,030	44,357	34,284	15,570	J. Drysdale	Burnaby 1	P.C.
Cariboo	60,464	32,474	21,778	9,327	W. C. Henderson	Rolla	P.C.
Coast-Capilano	91,051	56,211	44,698	19,343	W. H. Payne	West Vancouver	P.C.
Comox-Alberni	65,414	33,454	25,114	11,483	H. C. McQuillan	Courtenay	P.C.
Esquimalt-Saanich	59,812	37,371	28,937	18,768	Hon. G. R. Pearkes[2]	Saanich	P.C.
Fraser Valley	75,518	40,464	31,696	13,890	H. Hicks	Chilliwack	P.C.

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[1] Died Sept. 25, 1958; see Table 12 for by-election.

[2] Appointed Lieutenant-Governor of British Columbia Oct. 12, 1960; results of by-election in Appendix.

11.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Fourth General Election, Mar. 31, 1958, and Revised to Jan. 1, 1961—concluded.

Province or Territory and Electoral District	Population, Census 1956	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
British Columbia— concluded							
Kamloops	59,139	31,202	22,036	13,858	Hon. E. D. Fulton	Kamloops	P.C.
Kootenay East	36,845	19,154	16,162	5,363	M. L. McFarlane	Cranbrook	P.C.
Kootenay West	53,633	28,024	21,897	9,460	H. W. Herridge	Nakusp	C.C.F.
Nanaimo	52,805	31,184	24,616	10,734	W. F. Matthews	Nanaimo	P.C.
New Westminster	104,632	66,614	51,162	21,202	W. A. McLennan	New Westminster	P.C.
Okanagan Boundary	58,903	33,275	27,115	13,065	D. V. Pugh	Oliver	P.C.
Okanagan-Revelstoke	32,744	17,742	14,710	7,004	S. Fleming	Vernon	P.C.
Skeena	56,664	22,283	16,858	6,647	F. Howard	Terrace	C.C.F.
Vancouver-Burrard	59,862	42,155	29,978	18,001	J. Taylor	Vancouver	P.C.
Vancouver Centre	43,346	35,792	23,163	14,044	D. Jung	Vancouver	P.C.
Vancouver East	57,302	34,152	23,913	11,486	H. E. Winch	Vancouver	C.C.F.
Vancouver-Kingsway	61,720	38,270	28,132	11,928	J. F. Browne	Vancouver	P.C.
Vancouver Quadra	69,103	45,190	35,316	24,802	Hon. H. C. Green	Vancouver	P.C.
Vancouver South	77,716	48,907	37,093	22,292	E. J. Broome	Vancouver	P.C.
Victoria	81,559	52,281	41,145	24,945	A. D. McPhillips	Victoria	P.C.
Yukon Territory— (1 member)							
Yukon	12,190	6,071	5,469	2,947	E. Nielsen	Whitehorse	P.C.
Northwest Territories— (1 member)							
Mackenzie River	12,492	6,716	4,945	2,782	M. A. Hardie	Yellowknife	Lib.

12.—By-elections from the Date of the Twenty-Fourth General Election, Mar. 31, 1958, to Jan. 1, 1961[1]

Electoral District and Province	Date of By-election	Voters on List	Candidates	Votes Polled	Name of New Member	P.O. Address	Party Affiliation
		No.	No.	No.			
Montmagny-L'Islet, Que.	Sept. 29, 1958	20,199	2	14,456	Louis Fortin	Quebec	P.C.
Grenville-Dundas, Ont.	Sept. 29, 1958	22,113	2	15,812	Jean Casselman	Prescott	P.C.
Toronto-Trinity, Ont.	Dec. 15, 1958	28,693	4	12,017	Paul T. Hellyer	Toronto	Lib.
Springfield, Man.	Dec. 15, 1958	21,809	3	11,512	Joe Slogan	East Selkirk	P.C.
Hastings-Frontenac, Ont.	Oct. 5, 1959	27,069	2	12,533	Rod Webb	Norwood	P.C.
Russell, Ont.	Oct. 5, 1959	53,954	3	36,607	Paul Tardif	Ottawa	Lib.
Royal, N.B.	Oct. 31, 1960	21,326	3	16,972	Hugh John Flemming	Fredericton	P.C.
Labelle, Que.	Oct. 31, 1960	21,694	2	16,943	Gaston Clermont	Thurso	Lib.
Niagara Falls, Ont.	Oct. 31, 1960	41,322	3	28,686	J. V. Lamarsh	Stanford Township	Lib.
Peterborough, Ont.	Oct. 31, 1960	37,682	3	29,033	Walter Pitman	Peterborough	N.P.[2]

[1] Any by-elections held between Jan. 1, 1961 and the date of going to press will be included in an Appendix to this volume. [2] New Party.

Indemnities and Allowances.—Members of the Senate receive a sessional allowance at the rate of $8,000 per annum. In addition they receive at the end of each calendar year an annual expense allowance of $2,000 which is subject to income tax. Members of the House of Commons are paid a sessional allowance at the rate of $8,000 per annum. In addition they receive $2,000 as an expense allowance paid at the end of each calendar year. This allowance, except that for Ministers of the Crown and for Leaders of the Opposition in the House and in the Senate, is not subject to income tax. The remuneration of the Prime Minister is $25,000 a year and of a Cabinet Minister and the Leader of the Opposition $15,000 a year in addition to the sessional allowance and expense allowance each receives as a Member of Parliament. A Cabinet Minister is also entitled to a motor car allowance of $2,000. The remuneration of a Minister without Portfolio is $7,500 a year in addition to the sessional allowance and expense allowance, the latter taxable. The Speaker of the Senate and of the House of Commons each receives, besides the sessional allowance and expense allowance, a salary of $9,000 and a motor car allowance of $1,000 and each is entitled to $3,000 in lieu of a residence. The Deputy Speaker of the House of Commons receives a salary of $6,000 and an allowance of $1,500 in lieu of a residence. The Deputy Chairman of Committees receives an annual allowance of $2,000. Parliamentary Secretaries to the Ministers of the Crown receive $8,000 sessional allowance as Members of Parliament, $4,000 a year as Parliamentary Secretaries and the $2,000 expense allowance paid to all Members of Parliament.

The Federal Franchise.—The present federal franchise laws are contained in the Canada Elections Act (RSC 1952, c. 23). The franchise is conferred upon all Canadian citizens or British subjects, men and women, who have attained the age of 21 years and who have been ordinarily resident in Canada for 12 months prior to polling day at a federal election and ordinarily resident in the electoral district on the date of the issue of the writ ordering such election. Persons denied the right to vote are:—

(1) The Chief Electoral Officer and the Assistant Chief Electoral Officer;
(2) Judges appointed by the Governor General in Council;
(3) The returning officer for each electoral district;
(4) Persons undergoing punishment as inmates of any penal institution for the commission of any offence;
(5) Persons restrained of their liberty or deprived of the management of their property by reason of mental disease;
(6) Persons disqualified under any law relating to the disqualification of electors for corrupt and illegal practices.

Prior to July 1, 1960, the list of persons denied the right to vote included "Indians ordinarily resident on an Indian reserve who were not members of His Majesty's Forces in World Wars I or II or who did not execute a waiver of exemption under the Indian Act from taxation on and in respect of personal property". Legislation proclaimed on the above-mentioned date confers upon all Indians who have attained the age of 21 years, the right to vote at federal elections, without taking from them any of the rights and privileges to which they are entitled under the Indian Act.

The Canadian Forces Voting Rules set out in Schedule III to the Canada Elections Act prescribe voting procedure for members of the Armed Forces of Canada and also for veterans in receipt of treatment or domiciliary care in certain institutions.

13.—Voters on the Lists and Votes Polled at the Federal General Elections of 1949, 1953, 1957 and 1958

NOTE.—Corresponding statistics for the General Elections of 1911, 1917, 1921 and 1925 are given in the 1926 Year Book, p. 82; those for 1926 in the 1945 edition, p. 66; those for 1930 and 1935 in the 1948-49 edition, p. 94; those for 1940 in the 1956 edition, p. 81; and those for 1945 in the 1957-58 edition, p. 57.

Province or Territory	Voters on the Lists				Votes Polled			
	1949	1953	1957	1958	1949	1953	1957	1958
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland	182,439	194,715	197,657	204,778	105,190	111,768	92,986	160,928
Prince Edward Island	55,772	55,469	54,237	54,200	68,393[1]	66,562[1]	67,221[1]	69,302[1]
Nova Scotia	373,585	380,836	384,486	390,196	338,928[2]	334,855[2]	394,224[2]	418,479[2]
New Brunswick	286,723	287,657	291,185	294,387	225,877	225,390	236,997	249,706
Quebec	2,177,152	2,352,619	2,509,695	2,576,682	1,610,510	1,565,262	1,813,541	2,045,199
Ontario	2,718,118	2,894,150	3,100,943	3,189,422	2,042,294	1,938,959	2,295,124	2,534,555
Manitoba	451,882	465,374	474,068	481,552	324,079	276,422	351,909	385,648
Saskatchewan	472,884	480,532	484,355	488,139	375,471	356,479	392,329	399,949
Alberta	492,228	548,747	591,114	608,820	341,222	343,258	431,234	452,977
British Columbia	673,782	730,882	802,440	830,237	464,785	475,456	596,190	629,982
Yukon Territory[3]	9,064	5,028	5,514	6,071	6,823	3,818	4,892	5,469
Northwest Territories[4]	...	5,682	6,431	6,716	...	3,596	4,043	4,945
Totals	**7,893,629**	**8,401,691**	**8,902,125**	**9,131,200**	**5,903,572**	**5,701,825**	**6,680,690**	**7,357,139**

[1] Each voter in the double-member constituency of Queens County, P.E.I., had two votes; in 1958, 24,930 voters on the list cast 42,954 votes. [2] Each voter in the double-member constituency of Halifax, N.S., had two votes; in 1958, 112,253 voters on the list cast 179,287 votes. [3] Electoral District of Yukon. [4] Electoral District of Mackenzie River.

Subsection 3.—The Judiciary

The Federal Judiciary

The Parliament of Canada is empowered by Sect. 101 of the British North America Act to provide from time to time for the constitution, maintenance and organization of a general Court of Appeal for Canada and for the establishment of any additional courts for the better administration of the laws of Canada. Under this provision, Parliament has established the Supreme Court of Canada, the Exchequer Court of Canada and certain miscellaneous courts.

Supreme Court of Canada.—This Court, first established in 1875 and now governed by the Supreme Court Act (RSC 1952, c. 259), consists of a chief justice, who is called the Chief Justice of Canada, and eight puisne judges. The chief justice and the puisne judges are appointed by the Governor in Council and they hold office during good behaviour but are removable by the Governor General on address of the Senate and the House of Commons. They cease to hold office upon attaining the age of 75 years. The Court sits at Ottawa and exercises general appellate jurisdiction throughout Canada in civil and criminal cases. The Court is also required to consider and advise upon questions referred to it by the Governor in Council and it may also advise the Senate or the House of Commons on private Bills referred to the Court under any rules or orders of the Senate or of the House of Commons.

Appeals may be brought from any final judgment of the highest court of final resort in a province in any case where the amount or value of the matter in controversy exceeds the sum of $10,000. An appeal may be brought from any other final judgment with leave of the highest court of final resort in the province; if such court refuses to grant leave the Supreme Court of Canada may grant leave to appeal. The Supreme Court may grant leave to appeal from any judgment whether final or not. Appeals in respect of indictable offences are regulated by the Criminal Code. Appeals from federal courts are regulated by the statute establishing such courts. The judgment of the Supreme Court of Canada in all cases is final and conclusive.

14.—Chief Justice and Judges of the Supreme Court of Canada, as at Jan. 1, 1961

(In order of seniority)

Name	Date of Appointment
Hon. Chief Justice Patrick Kerwin	July 1, 1954[1]
Hon. Justice Robert Taschereau	Feb. 9, 1940
Hon. Justice Charles H. Locke	June 3, 1947
Hon. Justice John R. Cartwright	Dec. 23, 1949
Hon. Justice J. H. Gerald Fauteux	Dec. 23, 1949
Hon. Justice Douglas Charles Abbott	July 1, 1954
Hon. Justice Ronald Martland	Jan. 15, 1958
Hon. Justice Wilfred Judson	Feb. 5, 1958
Hon. Justice Roland A. Ritchie	May 5, 1959

[1] First appointed as a Judge of the Supreme Court, July 20, 1935.

Exchequer Court of Canada.—The Exchequer Court was first established in 1875 as part of the Supreme Court of Canada but is now a separate court governed by the Exchequer Court Act (RSC 1952, c. 98). The Court consists of a president and four puisne judges who are appointed by the Governor in Council. The president and the puisne judges hold office during good behaviour but may be removed by the Governor General on address of the Senate and the House of Commons. They cease to hold office upon attaining the age of 75 years. The Court sits at Ottawa and also at any other place in Canada where sittings may be fixed by the Court. The jurisdiction of the Court extends to cases where claims are made by or against the Crown in right of Canada. Proceedings against the Crown are taken by petition of right pursuant to the Petition of Right Act (RSC 1952, c. 210).

An appeal lies to the Supreme Court of Canada from any final judgment of the Exchequer Court in which the amount in controversy exceeds $500; an appeal also lies with leave of the Supreme Court in certain cases where the amount in controversy does not exceed $500 or where the judgment is not final.

The Exchequer Court also exercises admiralty jurisdiction in Canada. This was first conferred in 1891 by the Admiralty Act (SC 1891, c. 29) and is now governed by the Admiralty Act (RSC 1952, c. 1). Under this statute the Exchequer Court is continued as a Court of Admiralty. The president and puisne judges of the Exchequer Court exercise admiralty jurisdiction throughout the whole of Canada. In addition, Canada is divided into various admiralty districts; a district judge in admiralty is appointed for each district. Appeals to the Supreme Court of Canada from judgments of the president or the puisne judges are governed by the general appeal provisions in the Exchequer Court Act. Appeals may be taken from a final judgment of a district judge in admiralty either to the Exchequer Court or direct to the Supreme Court of Canada.

Miscellaneous Courts.—*Railway Act.*—The Railway Act, 1903 (RSC 1952, c. 234) established the Board of Railway Commissioners for Canada as a court of record; by the Transport Act, 1938 (RSC 1952, c. 271) the name was changed to the Board of Transport Commissioners for Canada. This Court exercises jurisdiction with respect to railway matters. The Governor in Council is given jurisdiction to vary any order of the Board and an appeal lies from the Board to the Supreme Court of Canada upon a question of jurisdiction or a question of law.

Bankruptcy Act.—By virtue of Sect. 91 (21) of the British North America Act, 1867, Parliament has exclusive legislative jurisdiction in relation to bankruptcy and insolvency. By the Bankruptcy Act (RSC 1952, c. 14) the superior courts of the provinces are constituted bankruptcy courts; original jurisdiction is conferred upon the trial courts and appellate jurisdiction is conferred upon the appeal courts of the provinces.

Income Tax Act and Estate Tax Act.—By the Income Tax Act (RSC 1952, c. 148) the Tax Appeal Board is established consisting of a chairman and not fewer than two or more than four members with jurisdiction over appeals against income tax assessments. A further appeal may be taken to the Exchequer Court. Under the Estate Tax Act (SC 1958, c. 29) the Tax Appeal Board also has jurisdiction to hear appeals from assessments under that Act.

Provincial and Territorial Judiciaries*

Certain provisions of the British North America Act govern to some extent the provincial judiciaries. Under Sect. 92 (14) the legislature of each province exclusively may make laws in relation to the administration of justice in the province including the constitution, maintenance and organization of provincial courts both of civil and of criminal jurisdiction. Sect. 96 provides that the Governor General shall appoint the judges of the superior, district and county courts in each province, except those of the courts of probate in Nova Scotia and New Brunswick. Sect. 100 provides that the salaries, allowances and pensions of judges of the superior, district and county courts (except the courts of probate in Nova Scotia and New Brunswick) are to be fixed and provided by the Parliament of Canada and these are set out in the Judges Act (RSC 1952, c. 159). Under Sect. 99 the judges of the superior courts hold office during good behaviour but are removable by the Governor General on address of the Senate and the House of Commons. The tenure of office of district and county court judges is fixed by the Judges Act as being during good behaviour and their residence within the area for which the court is established.

All provinces have minor courts with limited civil and criminal jurisdiction, the judges of which are appointed by provincial authority as, for example, justices of the peace, magistrates and juvenile court judges. Except in Quebec, there are county or district courts of each province with limited jurisdiction varying from $500 to $2,500 in amount. Each province has a superior court with virtually unlimited jurisdiction variously known as Court of Queen's Bench, Supreme Court, Superior Court, etc. There is also a Court of Appeal in each province.

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* More detailed information concerning provincial judiciaries is given in the 1954 Year Book, pp. 48-55.

The Yukon Act and the Northwest Territories Act each provide for a superior court of record in and for the Territory, called the Territorial Court, and consisting of one or more judges appointed by the Governor in Council. The judges of the Territorial Court of the Yukon Territory are ex officio judges of the Territorial Court of the Northwest Territories and vice versa. In 1960 provision was made for a Court of Appeal for the Yukon Territory, comprised of the Chief Justice and Justices of Appeal of British Columbia and Judges of the Territorial Court of Yukon and of the Northwest Territories. Police magistrates and justices of the peace have jurisdiction in minor civil and criminal cases.

Section 2.—Provincial and Territorial Governments*

In each of the provinces, the Queen is represented by a Lieutenant-Governor appointed by the Governor General in Council. The Lieutenant-Governor acts on the advice and with the assistance of his Ministry or Executive Council which is responsible to the Legislature and resigns office under circumstances similar to those described on pp. 59-60 concerning the Federal Government.

The Legislature of each province is unicameral, consisting of the Lieutenant-Governor and a Legislative Assembly, except for the Province of Quebec where there is a Legislative Council as well as a Legislative Assembly.

The Legislative Assembly is elected by the people for a statutory term of five years but may be dissolved within that period by the Lieutenant-Governor on the advice of the Premier of the province.

The source of legislative authority of the Provincial Legislatures is the British North America Act, 1867 (U.K. Stat. 1867, c. 3 and amendments). Under Sect. 92 of the Act the Legislature of each province exclusively may make laws in relation to the following matters: amendment of the constitution of the province except as regards the Lieutenant-Governor; direct taxation within the province; borrowing of money on the credit of the province; establishment and tenure of provincial offices and appointment and payment of provincial officers; the management and sale of public lands belonging to the province and of the timber and wood thereon; the establishment, maintenance and management of public and reformatory prisons in and for the province; the establishment, maintenance and management of hospitals, asylums, charities and eleemosynary institutions in and for the province, other than marine hospitals; municipal institutions in the province; shop, saloon, tavern, auctioneer and other licences issued for the raising of provincial or municipal revenue; local works and undertakings other than interprovincial or international lines of ships, railways, canals, telegraphs, etc., or works which, though wholly situated within one province, are declared by the Federal Parliament to be for the general advantage either of Canada or of two or more provinces; the incorporation of companies with provincial objects; the solemnization of marriage in the province; property and civil rights in the province; the administration of justice in the province including the constitution, maintenance and organization of provincial courts both of civil and of criminal jurisdiction including procedure in civil matters in these courts; the imposition of punishment by fine, penalty or imprisonment for enforcing any law of the province relating to any of the aforesaid subjects; generally all matters of a merely local or private nature in the province.

Further, in and for each province the Legislature exclusively may, under Sect. 93, make laws in relation to education subject to certain restrictions relating to the establishment of schools by religious minorities. These powers with similar restrictions were conferred on the more recently admitted provinces on their inclusion in the federation.

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* The information given in Subsections 1 to 9 of this Section is brought up to Jan. 1, 1961.

The Provincial Legislatures may also make laws under Sect. 95 in relation to agriculture and immigration, subject to any laws of the Parliament of Canada in relation to these subjects.

Provincial Franchise.—Details regarding qualifications and disqualifications of the franchise are contained in the Elections Act of each province. In general, every person, male or female, at the age of 21 years who is a Canadian citizen or other British subject, who complies with certain residence requirements in the province and the electoral district of polling and who falls under no statutory disqualifications, is entitled to vote. These qualifications apply with modifications to voters in most provinces. The principal exceptions give voting privileges to persons in Saskatchewan at the age of 18 and in Alberta and British Columbia at 19 years.

Subsection 1.—Newfoundland

The Government of Newfoundland consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. The Legislative Assembly has 36 members elected for a term of five years. The Legislature elected Aug. 20, 1959 is the 32nd in the history of Newfoundland and the 4th since Confederation.

Since the date of Confederation, Mar. 31, 1949, the province has had three Lieutenant-Governors: the Hon. Sir Albert Joseph Walsh commissioned Apr. 1, 1949; the Hon. Lt.-Col. Sir Leonard Outerbridge commissioned Sept. 5, 1949; and the Hon. Campbell Macpherson commissioned Dec. 16, 1959. The first Ministry, formed on July 13, 1949 under the leadership of the Hon. Joseph R. Smallwood, was still in office on Jan. 1, 1961.

The Premier receives a salary of $10,000 and the other Cabinet Ministers $9,000 per annum, plus a sessional indemnity of $3,333.33. Each member of the House of Assembly receives a sessional indemnity of $3,333.33 plus a travelling and expense allowance of $1,666.66. An additional allowance of $3,000 is made to the Leader of the Opposition.

15.—First Ministry of Newfoundland, as at Jan. 1, 1961

(Party standing at latest General Election, Aug. 20, 1959: 31 Liberal, 3 Progressive Conservative and 2 United Newfoundland.)

Office	Name	Date of First Appointment	Date of Present Appointment[1]
Premier and Minister of Economic Development	Hon. J. R. SMALLWOOD	Apr. 1, 1949	Apr. 1, 1949
Attorney General	Hon. L. R. CURTIS	Apr. 1, 1949	Apr. 1, 1949
Minister of Mines and Resources	Hon. W. J. KEOUGH	July 29, 1949	May 1, 1957
Minister of Labour	Hon. C. H. BALLAM	Apr. 4, 1950	Apr. 4, 1950
Minister of Public Welfare and Minister of Municipal Affairs and Supply	Hon. B. J. ABBOTT	May 1, 1957	May 1, 1957
Minister of Finance	Hon. E. S. SPENCER	July 29, 1949	May 1, 1957
Minister of Public Works	Hon. J. R. CHALKER	Apr. 4, 1950	May 1, 1957
Minister of Highways	Hon. F. W. ROWE	May 21, 1952	May 11, 1959
Minister without Portfolio	Hon. P. J. LEWIS	Dec. 15, 1951	Dec. 15, 1951
Minister of Provincial Affairs and Solicitor General	Hon. MYLES P. MURRAY	Dec. 15, 1951	Dec. 15, 1951 Apr. 10, 1955
Minister of Fisheries	Hon. J. T. CHEESEMAN	May 1, 1957	May 1, 1957
Minister of Health	Hon. J. M. McGRATH	July 5, 1956	Aug. 7, 1956
Minister of Education	Hon. G. A. FRECKER	Aug. 26, 1959	Aug. 26, 1959

[1] Minister not necessarily sworn in on date of appointment.

Subsection 2.—Prince Edward Island

The Government of Prince Edward Island consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. The Hon. F. W. Hyndman, Lieutenant-Governor at Jan. 1, 1961, was commissioned to office Mar. 31, 1958. Lieutenant-Governors from Confederation (1873) to 1959 are cited in the 1960 Year Book, p. 105.

The General Assembly elected Sept. 1, 1959 is the 49th in the history of Prince Edward Island Legislatures and the 24th since Confederation. It has 30 members from 15 electoral districts who serve for a statutory term of five years. One-half of the members of the Legislative Assembly are elected on a property vote. Each district elects one Councillor (elected on a property vote) and one Assembly member (elected on a general franchise vote). Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 105.

The annual salary of the Premier is $6,000 and that of a Cabinet Minister $4,000. Each member of the Assembly is paid $1,450 for each session attended by him and an additional $500 tax free as indemnity for expenses incurred. The Speaker is paid an additional $400 and a further additional $200 tax free as an indemnity. The Leader of the Opposition is paid an additional $800 and a further additional $200 tax free for expenses incurred by him in performance of official duties.

16.—Legislatures of Prince Edward Island, 1935-60, as at Jan. 1, 1961

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 75, and for 1924-35 in the 1938 edition, p. 110.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
July 23, 1935	18th	5	Sept. 25, 1935	Apr. 21, 1939
May 18, 1939	19th	4	Mar. 20, 1940	Aug. 20, 1943
Sept. 15, 1943	20th	4	Feb. 15, 1944	Oct. 27, 1947
Dec. 11, 1947	21st	5	Feb. 24, 1948	Mar. 30, 1951
Apr. 26, 1951	22nd	6	Oct. 23, 1951	Apr. 27, 1955
May 25, 1955	23rd	4	Feb. 2, 1956	Aug. 3, 1959
Sept. 1, 1959	24th	[1]	Mar. 1, 1960	[1]

[1] Life of Legislature not expired at Jan. 1, 1961.

17.—Twenty-Fourth Ministry of Prince Edward Island, as at Jan. 1, 1961

(Party standing at latest General Election, Sept. 1, 1959: 22 Progressive Conservative and 8 Liberal.)

Office	Name	Date of First Appointment	Date of Present Appointment[1]
Premier and President of the Executive Council	Hon. WALTER R. SHAW	Sept. 16, 1959	Sept. 16, 1959
Minister of Public Works and Minister of Highways	Hon. J. PHILIP MATHESON	Sept. 16, 1959	Sept. 16, 1959
Minister of Education	Hon. L. GEORGE DEWAR	Sept. 16, 1959	Sept. 16, 1959
Minister of Industry and Natural Resources and Minister of Fisheries	Hon. LEO F. ROSSITER	Sept. 16, 1959	Sept. 16, 1959
Minister of Health	Hon. HUBERT B. MCNEILL	Sept. 16, 1959	Sept. 16, 1959
Provincial Treasurer, Attorney and Advocate General	Hon. MELVIN J. MCQUAID	Sept. 16, 1959	Sept. 16, 1959 Sept. 16, 1960
Provincial Secretary, Minister of Tourist Development and Minister of Municipal Affairs	Hon. J. DAVID STEWART	Sept. 16, 1959	Sept. 16, 1959 Apr. 13, 1960
Minister of Welfare and Minister of Labour	Hon. HENRY W. WEDGE	Sept. 16, 1959	Sept. 16, 1959
Minister of Agriculture	Hon. ANDREW B. MACRAE	Sept. 16, 1960	Sept. 16, 1960

[1] Minister not necessarily sworn in on date of appointment.

Subsection 3.—Nova Scotia

The Government of Nova Scotia consists of a Lieutenant-Governor, an Executive Council and a House of Assembly. Maj.-Gen. the Hon. E. C. Plow, Lieutenant-Governor at Jan. 1, 1961, was commissioned to office Sept. 1, 1958. Lieutenant-Governors since Confederation (1867) are cited in the 1960 Year Book, p. 106.

The Legislature has 43 members elected for a maximum term of five years. The Legislature elected June 7, 1960 was the 47th in Nova Scotia's history and the 24th since Confederation. Premiers since Confederation are listed in the 1960 Year Book, p. 107.

The Premier of the province receives a salary of $12,000 per annum and each Cabinet Minister a salary of $10,000 per annum. Each member of the House of Assembly receives a sessional indemnity of $3,200 and an allowance of $1,600 for expenses incidental to the discharge of his duties. The Leader of the Opposition receives an allowance of $6,000 in addition to his sessional indemnity.

18.—Legislatures of Nova Scotia, 1933-60, as at Jan. 1, 1961

Note.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 76, and for 1924–33 in the 1938 edition, p. 111.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Aug. 22, 1933	17th	4	Mar. 1, 1934	May 20, 1937
June 29, 1937	18th	4	Mar. 1, 1938	Sept. 19, 1941
Oct. 28, 1941	19th	4	Feb. 19, 1942	Sept. 12, 1945
Oct. 23, 1945	20th	4	Mar. 14, 1946	Apr. 27, 1949
June 9, 1949	21st	4	Mar. 21, 1950	Apr. 14, 1953
May 26, 1953	22nd	3	Feb. 24, 1954	Sept. 20, 1956
Oct. 30, 1956	23rd	3	Feb. 27, 1957	Apr. 26, 1960
June 7, 1960	24th	[1]	[1]	[1]

[1] Legislature not yet in session at Jan. 1, 1961.

19.—Seventeenth Ministry of Nova Scotia, as at Jan. 1, 1961

(Party standing at latest General Election, Sept. 30, 1960: 27 Progressive Conservative, 15 Liberal and 1 Co-operative Commonwealth Federation.)

Office	Name	Date of First Appointment	Date of Present Appointment[1]
Premier, Provincial Treasurer, and Minister of Education	Hon. R. L. Stanfield	Nov. 20, 1956	Nov. 20, 1956 July 27, 1959
Minister of Highways and Chairman of the Nova Scotia Power Commission	Hon. G. I. Smith	Nov. 20, 1956	Nov. 20, 1956
Attorney General and Minister of Public Health	Hon. R. A. Donahoe	Nov. 20, 1956	Nov. 20, 1956
Minister of Public Works and Minister of Labour	Hon. S. T. Pyke	Nov. 20, 1956	Nov. 20, 1956
Minister of Agriculture and Marketing and Minister of Lands and Forests	Hon. E. D. Haliburton	Nov. 20, 1956	Nov. 20, 1956 July 27, 1959
Minister of Mines and Minister of Trade and Industry	Hon. E. A. Manson	Nov. 20, 1956	Nov. 20, 1956
Minister of Municipal Affairs and Minister in charge of Civil Defence	Hon. N. L. Fergusson	Nov. 20, 1956	July 27, 1959
Provincial Secretary and Minister of Public Welfare	Hon. W. S. Kennedy Jones	Apr. 21, 1960	Oct. 20, 1960
Minister without Portfolio in charge of the Liquor Control Act	Hon. Donald M. Smith	Oct. 13, 1960	Oct. 13, 1960
Minister without Portfolio	Hon. George A. Burridge	Oct. 13, 1960	Oct. 13, 1960

[1] Minister not necessarily sworn in on date of appointment.

Subsection 4.—New Brunswick

The Government of New Brunswick has a Lieutenant-Governor, an Executive Council and a House of Assembly. The Hon. J. Leonard O'Brien, Lieutenant-Governor at Jan. 1, 1961, was commissioned to office June 6, 1958. Lieutenant-Governors from Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 108.

The Legislature elected June 27, 1960 is the 44th in New Brunswick's history and the 17th since Confederation. It has 52 members who are elected for a statutory term of five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 108.

The Premier receives $5,000 per annum in addition to the salary for any other portfolio he may hold. The salary of each Cabinet Minister is $7,500 and the amount paid as indemnity to each member of the House of Assembly is $2,400 plus an additional $1,200 allowance for expenses. The Leader of the Opposition receives an additional $3,000 and the Speaker receives an allowance of $1,000 in addition to the regular indemnity.

20.—Legislatures of New Brunswick, 1935-60, as at Jan. 1, 1961

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 77, and for 1924-35 in the 1938 edition, p. 112.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
June 27, 1935	11th	4	Mar. 5, 1936	Oct. 26, 1939
Nov. 20, 1939	12th	5	Apr. 4, 1940	July 10, 1944
Aug. 28, 1944	13th	4	Feb. 20, 1945	May 18, 1948
June 28, 1948	14th	4	Mar. 8, 1949	July 16, 1952
Sept. 22, 1952	15th	4	Feb. 12, 1953	Apr. 17, 1956
June 18, 1956	16th	4	Feb. 21, 1957	May 19, 1960
June 27, 1960	17th	[1]	Nov. 17, 1960	[1]

[1] Life of Legislature not expired at Jan. 1, 1961.

21.—Twenty-Third Ministry of New Brunswick, as at Jan. 1, 1961

(Party standing at latest General Election, June 27, 1960: 31 Liberal and 21 Progressive Conservative.)

Office	Name	Date of First Appointment	Date of Present Appointment[1]
Premier and Attorney General	Hon. Louis J. Robichaud	July 12, 1960	July 12, 1960
Provincial Secretary-Treasurer	Hon. L. G. DesBrisay	July 12, 1960	July 12, 1960
Minister of Lands and Mines	Hon. H. G. Crocker	July 12, 1960	July 12, 1960
Minister of Education	Hon. Henry G. Irwin	July 12, 1960	July 12, 1960
Minister of Public Works	Hon. Andrew F. Richard	July 12, 1960	July 12, 1960
Minister of Agriculture	Hon. J. Adrien Levesque	July 12, 1960	July 12, 1960
Minister of Health and Social Services	Hon. George L. Dumont	July 12, 1960	July 12, 1960
Minister of Labour	Hon. Kenneth J. Webber	July 12, 1960	July 12, 1960
Minister of Municipal Affairs	Hon. Joseph E. LeBlanc	July 12, 1960	July 12, 1960
Chairman, New Brunswick Electric Power Commission	Hon. Donald Harper	July 12, 1960	July 12, 1960
Minister of Youth and Welfare	Hon. William R. Duffie	July 12, 1960	Nov. 30, 1960
Minister of Industry and Development	Hon. Michel Fournier	July 12, 1960	July 12, 1960

[1] Minister not necessarily sworn in on date of appointment.

Subsection 5.—Quebec

The Government of Quebec consists of a Lieutenant-Governor, an Executive Council and a bicameral legislature—the Legislative Council and the Legislative Assembly. The Hon. Onésime Gagnon, Lieutenant-Governor at Jan. 1, 1961, was commissioned to office Feb. 14, 1958. Lieutenant-Governors since Confederation (1867) are cited in the 1960 Year Book, p. 109.

The Legislative Council has 24 members nominated for life by the Lieutenant-Governor in Council. The Legislative Assembly has 95 elected members and, like the Legislative Council, has the power to bring forward Bills relating to civil and administrative matters and to the amendment or repeal of existing laws. A Bill to be approved by the Lieutenant-Governor must have received the assent of both Houses. Only the Legislative Assembly can bring forward a Bill requiring the expenditure of public money. The maximum life of a Legislature is five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 110.

22.—Legislatures of Quebec, 1935-60, as at Jan. 1, 1961

Note.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 78, and for 1924-35 in the 1938 edition, p. 113.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Nov. 25, 1935	19th	1	Mar. 24, 1936	June 11, 1936
Aug. 17, 1936	20th	4	Oct. 7, 1936	Sept. 23, 1939
Oct. 25, 1939	21st	5	Feb. 20, 1940	June 29, 1944
Aug. 8, 1944	22nd	4	Feb. 7, 1945	June 9, 1948
July 28, 1948	23rd	4	Jan. 19, 1949	May 28, 1952
July 16, 1952	24th	4	Nov. 12, 1952	Apr. 25, 1956
June 20, 1956	25th	4	Nov. 14, 1956	Apr. 27, 1960
June 22, 1960	26th	[1]	Sept. 20, 1960	[1]

[1] Life of Legislature not expired at Jan. 1, 1961.

23.—Twenty-Third Ministry of Quebec, as at Jan. 1, 1961

(Party standing at latest General Election, June 22, 1960: 51 Liberal, 43 Union Nationale and 1 Independent.)

Office	Name	Date of First Appointment	Date of Present Appointment[1]
Premier and Minister of Finance	Hon. Jean Lesage	July 6, 1960	July 6, 1960
Attorney General	Hon. Georges Lapalme	July 6, 1960	July 6, 1960
Minister of Labour and Minister of Municipal Affairs	Hon. René Hamel	July 6, 1960	July 6, 1960
Minister of Youth	Hon. Paul Gérin-Lajoie	July 6, 1960	July 6, 1960
Minister of Agriculture and Minister of Colonization	Hon. Alcide Courcy	July 6, 1960	July 6, 1960
Minister of Public Works and Minister of Hydraulic Resources	Hon. René Lévesque	July 6, 1960	July 6, 1960
Minister of Mines	Hon. Paul Earl	July 6, 1960	July 6, 1960
Minister of Transportation and Communications	Hon. Gérard Cournoyer	July 6, 1960	July 6, 1960
Minister of Roads	Hon. Bernard Pinard	July 6, 1960	July 6, 1960
Minister of Social Welfare	Hon. Emilien Lafrance	July 6, 1960	July 6, 1960
Provincial Secretary	Hon. Lionel Bertrand	July 6, 1960	July 6, 1960
Minister of Health	Hon. Alphonse Courturier	July 6, 1960	July 6, 1960
Minister of Fisheries and Game	Hon. Gérard D. Lévesque	July 6, 1960	July 6, 1960
Minister of Trade and Commerce	Hon. André Rousseau	July 6, 1960	July 6, 1960
Minister of Lands and Forests	Hon. Bona Arsenault	July 6, 1960	July 6, 1960
Minister without Portfolio	Hon. C. A. Kirkland	July 6, 1960	July 6, 1960
Minister without Portfolio	Hon. George C. Marler	Oct.11, 1960	Oct.11, 1960

[1] Minister not necessarily sworn in on date of appointment.

24.—Members of the Legislative Council of Quebec, as at Jan. 1, 1961

(According to seniority)

Name	Division	Date of Appointment
R. O. Grothé	De Salaberry	Dec. 23, 1927
Victor Marchand	Rigaud	Apr. 15, 1932
Hector Laferté	Stadacona	July 23, 1934
J. L. Baribeau (Speaker)	Shawinigan	Jan. 14, 1938
Philippe Brais	Grandville	Feb. 16, 1940
Jules Brillant	Golfe	Jan. 14, 1942
Frank L. Connors	Mille Isles	Jan. 14, 1942
Félix Messier	De Lanaudière	Feb. 12, 1942
Édouard Asselin	Wellington	Jan. 23, 1946
Geo. B. Foster	Victoria	Aug. 22, 1946
Gérald Martineau	Les Laurentides	Aug. 22, 1946
J. Olier Renaud	Alma	Aug. 22, 1946
Patrice Tardif	De la Vallière	July 20, 1952
Joseph Boulanger	De la Durantaye	Oct. 8, 1952
Édouard Masson	Repentigny	Mar. 12, 1953
Albert Bouchard	La Salle	Nov. 24, 1954
Jean Barrette	Sorel	Oct. 19, 1955
Émile Lesage	Montarville	Aug. 1, 1956
Albiny Paquette	Rougemont	Oct. 29, 1958
John P. Rowatt	De Lorimier	Oct. 29, 1958
Ernest Benoit	Kennebec	Apr. 8, 1959
Oscar Gilbert	Bedford	Mar. 30, 1960
Jean Raymond	Lauzon	Apr. 27, 1960
George C. Marler	Inkerman	Oct. 14, 1960

Subsection 6.—Ontario

The Government of Ontario consists of a Lieutenant-Governor, an Executive Council and a House of Assembly. The Honourable Justice John Keiller Mackay, Lieutenant-Governor at Jan. 1, 1961, was commissioned to office Dec. 30, 1957. Lieutenant-Governors since Confederation (1867) are cited in the 1960 Year Book, p. 112.

The House of Assembly, the single-chamber Legislature of the province, is composed of 98 members elected for a statutory term of five years. Premiers since Confederation are listed in the 1960 Year Book, p. 112.

Besides the regular departments of government, the Niagara Parks Commission, the Ontario Municipal Board, The Hydro-Electric Power Commission of Ontario, the Ontario–St. Lawrence Development Commission, the Ontario Northland Transportation Commission, the Liquor Control Board, the Liquor Licence Board, the Hospital Services Commission and The Water Resources Commission have been created.

Under the provisions of the Legislative Assembly Act (RSO 1950, c. 202, and amendments) each member of the Assembly is paid an annual indemnity of $5,000 and an allowance of $2,000 for expenses. In addition, the Speaker receives a special indemnity at the annual rate of $3,000 and an expense allowance of $2,000; the Chairman of the Committee of the Whole a special indemnity at the annual rate of $2,000; and the Leader of the Opposition a salary of $12,000 per annum. Each member of the Cabinet having charge of a department receives the ordinary indemnity as a member of the Legislature in addition to his salary as a Minister of the Crown. The salary provided in the Executive Council Act for the Premier is $16,000 and for a Cabinet Minister having charge of a department $12,000. By the 1956 amendment, every Minister of the Crown in charge of a department, the Minister of the Crown who is a member of The Hydro-Electric Power Commission of Ontario, and the Leader of the Opposition receives a representation allowance of $2,000 per annum. Each Minister without Portfolio, other than the Minister who is a member of The Hydro-Electric Power Commission, receives $2,500 salary and $1,000 representation allowance per annum, by amendments in 1959 to the Executive Council Act and the Legislative Assembly Act, respectively.

25.—Legislatures of Ontario, 1934-60, as at Jan. 1, 1961

Note.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 79, and for 1924-34 in the 1938 edition, p. 114.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
June 19, 1934	19th	3	Feb. 20, 1935	Apr. 9, 1936
Oct. 6, 1937	20th	8	Dec. 1, 1937	June 30, 1943
Aug. 4, 1943	21st	2	Feb. 22, 1944	Mar. 24, 1945
June 4, 1945	22nd	4	July 16, 1945	Apr. 27, 1948
June 7, 1948	23rd	4	Feb. 10, 1949	Oct. 6, 1951
Nov. 22, 1951	24th	5	Feb. 21, 1952	May 2, 1955
June 9, 1955	25th	5	Sept. 8, 1955	May 4, 1959
June 11, 1959	26th	[1]	Jan. 26, 1960	[1]

[1] Life of Legislature not expired at Jan. 1, 1961.

26.—Sixteenth Ministry of Ontario, as at Jan. 1, 1961

(Party standing at latest General Election, June 11, 1959: 71 Progressive Conservative, 22 Liberal and 5 Co-operative Commonwealth Federation.)

Note.—Ministers are shown at date of original appointment as a Minister and at date of appointment to present portfolio, despite the formation of a new Ministry consequent upon the appointment of a new Premier.

Office	Name	Date of First Appointment	Date of Present Appointment[1]
Premier and President of the Council	Hon. Leslie M. Frost	Aug. 17, 1943	May 4, 1949
Minister of Labour	Hon. Charles Daley	Aug. 17, 1943	Aug. 17, 1943
Minister of Agriculture	Hon. William A. Goodfellow	Jan. 7, 1946	Aug. 1, 1956
Minister of Public Welfare	Hon. Louis P. Cecile	Sept. 17, 1948	Aug. 17, 1955
Minister of Municipal Affairs	Hon. William K. Warrender	Jan. 20, 1953	Nov. 1, 1956
Treasurer and Minister in charge of the Department of Economics	Hon. James N. Allan	Jan. 5, 1955	Apr. 28, 1958
Minister of Planning and Development	Hon. William M. Nickle	Jan. 20, 1955	Aug. 17, 1955
Attorney General and Minister in charge of the Department of Insurance	Hon. A. Kelso Roberts	Aug. 17, 1955	Aug. 17, 1955
Minister of Travel and Publicity	Hon. Bryan L. Cathcart	Aug. 17, 1955	Aug. 17, 1955
Minister of Public Works	Hon. Thomas R. Connell	Nov. 1, 1956	Dec. 22, 1958
Minister of Health	Hon. Matthew B. Dymond	July 18, 1957	Dec. 22, 1958
Minister of Lands and Forests	Hon. Joseph W. Spooner	July 18, 1957	July 23, 1958
Minister of Highways	Hon. Frederick M. Cass	Apr. 28, 1958	Apr. 28, 1958
Provincial Secretary and Minister of Citizenship	Hon. John Yaremko	Apr. 28, 1958	May 26, 1960
Minister of Energy Resources and 2nd Vice-Chairman, The Hydro-Electric Power Commission	Hon. Robert W. Macaulay	May 26, 1958	May 5, 1959
Minister of Mines	Hon. James A. Maloney	Dec. 22, 1958	Dec. 22, 1958
Minister of Reform Institutions	Hon. George C. Wardrope	Dec. 22, 1958	Dec. 22, 1958
Minister of Education	Hon. John P. Robarts	Dec. 22, 1958	Dec. 17, 1959
Minister without Portfolio	Hon. John H. H. Root	Dec. 22, 1958	Dec. 22, 1958
Minister of Transport	Hon. Henry L. Rowntree	Nov. 21, 1960	Nov. 21, 1960
Minister without Portfolio	Hon. Allan Grossman	Nov. 21, 1960	Nov. 21, 1960
Minister without Portfolio	Hon. William A. Stewart	Nov. 21, 1960	Nov. 21, 1960

[1] Minister not necessarily sworn in on date of appointment.

Subsection 7.—Manitoba

In addition to a Lieutenant-Governor, Manitoba has an Executive Council at present composed of nine members and a Legislative Assembly of 57 members elected for a statutory term of five years. The Hon. Errick F. Willis, Lieutenant-Governor at Jan. 1, 1961, was sworn in on Jan. 15, 1960. Lieutenant-Governors from Confederation (1870) to 1959 are cited in the 1960 Year Book, p. 113. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 114.

The Premier of the province is paid a salary of $12,000 per annum and each of the other members of the Cabinet $10,000. Members of the Legislature are each paid a sessional indemnity of $2,667 and an expense allowance of $1,333. The Leader of the Opposition is paid an additional amount of $2,500 and the Speaker of the Legislature receives an amount double the indemnity and expense allowance of an individual member.

27.—Legislatures of Manitoba, 1936-60, as at Jan. 1, 1961

Note.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 80, and for 1924–36 in the 1938 edition, p. 115.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
July 27, 1936	20th	5	Feb. 18, 1937	Mar. 13, 1941
Apr. 22, 1941	21st	5	Dec. 9, 1941	Sept. 8, 1945
Oct. 15, 1945	22nd	4	Feb. 19, 1946	Sept. 29, 1949
Nov. 10, 1949	23rd	7	Feb. 14, 1950	Apr. 23, 1953
June 8, 1953	24th	5	Feb. 2, 1954	Apr. 30, 1958
June 16, 1958	25th	2	Oct. 23, 1958	Mar. 31, 1959
May 14, 1959	26th	1	June 9, 1959	[1]

[1] Life of Legislature not expired at Jan. 1, 1961.

28.—Fifteenth Ministry of Manitoba, as at Jan. 1, 1961

(Party standing at latest General Election, May 14, 1959: 36 Progressive Conservative, 11 Liberal and 10 Co-operative Commonwealth Federation.)

Note.—Ministers are shown at date of original appointment as a Minister and at date of appointment to present portfolio, despite the formation of a new Ministry consequent upon the appointment of a new Premier.

Office	Name	Date of First Appointment	Date of Present Appointment[1]
Premier and Acting Provincial Treasurer	Hon. Dufferin Roblin	June 30, 1958	June 30, 1958
Minister of Public Works	Hon. Errick Willis	Nov. 2, 1940	Aug. 7, 1959
Minister of Industry and Commerce and Provincial Secretary	Hon. Gurney Evans	June 30, 1958	Aug. 7, 1959
Minister of Education	Hon. Stewart E. McLean	June 30, 1958	June 30, 1958
Attorney General and Acting Minister of Municipal Affairs	Hon. Sterling Lyon	June 30, 1958	June 30, 1958
Minister of Labour	Hon. John Thompson	June 30, 1958	June 30, 1958
Minister of Public Utilities and Acting Provincial Secretary	Hon. John Carroll	June 30, 1958	June 30, 1958
Minister of Agriculture and Conservation	Hon. George Hutton	Aug. 7, 1959	Aug. 7, 1959
Minister of Mines and Resources	Hon. Charles H. Witney	Aug. 7, 1959	Aug. 7, 1959

[1] Minister not necessarily sworn in on date of appointment.

Subsection 8.—Saskatchewan

The Government of Saskatchewan consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. The Hon. F. L. Bastedo, Lieutenant-Governor at Jan. 1, 1961, was commissioned to office Jan. 27, 1958. Lieutenant-Governors since Confederation (1905) are cited in the 1960 Year Book, p. 115.

The statutory number of members of the Legislative Assembly is 55, elected for a maximum term of five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 115.

The Premier receives $9,500 and each Cabinet Minister $8,000 annually in addition to a sessional indemnity. The Leader of the Opposition receives $5,000, the Speaker $2,500 and the Deputy Speaker $1,500. The sessional indemnity of a member of the Legislature is $3,200 together with an expense allowance of $1,600. Members for the three northernmost constituencies of Cumberland, Athabasca and Meadow Lake each receive a $3,500 sessional indemnity and a $1,750 expense allowance.

29.—Legislatures of Saskatchewan, 1934-60, as at Jan. 1, 1961

Note.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 81, and for 1924-34 in the 1938 edition, p. 116.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
June 19, 1934	8th	4	Nov. 15, 1934	May 14, 1938
June 8, 1938	9th	6	Jan. 19, 1939	May 10, 1944
June 15, 1944	10th	5	Oct. 19, 1944	May 19, 1948
June 24, 1948	11th	5	Feb. 10, 1949	May 7, 1952
June 11, 1952	12th	4	Feb. 12, 1953	Apr. 25, 1956
June 20, 1956	13th	4	Feb. 14, 1957	May 4, 1960
June 8, 1960	14th	[1]	[1]	[1]

[1] Legislature not yet in session at Jan. 1, 1961.

30.—Eighth Ministry of Saskatchewan, as at Jan. 1, 1961

(Party standing at latest General Election, June 8, 1960: 38 Co-operative Commonwealth Federation and 17 Liberal.)

Note.—Ministers are shown at date of original appointment as a Minister and at date of appointment to present portfolio, despite the formation of a new Ministry consequent upon the appointment of a new Premier.

Office	Name	Date of First Appointment	Date of Present Appointment[1]
Premier and President of the Council	Hon. T. C. Douglas	July 10, 1944	July 10, 1944
Provincial Treasurer	Hon. W. S. Lloyd	July 10, 1944	Aug. 1, 1960
Minister of Mineral Resources	Hon. J. H. Brockelbank	July 10, 1944	Apr. 1, 1953
Minister of Municipal Affairs	Hon. L. F. McIntosh	July 10, 1944	Aug. 4, 1948
Minister of Labour and Minister of Telephones	Hon. C. C. Williams	July 10, 1944	Nov. 13, 1944 July 27, 1956
Minister of Agriculture	Hon. I. C. Nollet	Jan. 8, 1946	Jan. 8, 1946
Minister of Natural Resources	Hon. A. G. Kuziak	Oct. 24, 1952	July 27, 1956
Attorney General and Provincial Secretary	Hon. R. A. Walker	July 27, 1956	July 27, 1956 Aug. 30, 1957
Minister of Industry and Information	Hon. R. Brown	July 27, 1956	Apr. 1, 1960
Minister of Public Health	Hon. J. W. Erb	July 27, 1956	July 27, 1956
Minister of Highways and Transportation	Hon. C. G. Willis	Aug. 31, 1956	Aug. 1, 1960
Minister of Social Welfare and Rehabilitation	Hon. A. M. Nicholson	July 11, 1960	July 11, 1960
Minister of Co-operation and Co-operative Development	Hon. O. A. Turnbull	July 11, 1960	July 11, 1960
Minister of Education	Hon. A. E. Blakeney	Aug. 1, 1960	Aug. 1, 1960
Minister of Public Works	Hon. W. G. Davies	Aug. 29, 1960	Aug. 29, 1960

[1] Minister not necessarily sworn in on date of appointment.

Subsection 9.—Alberta

The Government of Alberta is composed of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. There are 65 members in the Legislative Assembly, elected for a maximum period of five years. The Hon. J. Percy Page, Lieutenant-Governor at Jan. 1, 1961, was commissioned to office Dec. 19, 1959. Lieutenant-Governors since Confederation (1905) are listed in the 1960 Year Book, p. 116. Premiers since Confederation are listed in the same edition, p. 117.

Each member of the Legislative Assembly (except the Speaker and the Deputy Speaker) receives a sessional indemnity of $3,000 plus $1,500 expense allowance plus $15 for each day during the session when he is necessarily absent from his ordinary place of residence, both tax free. The Speaker's sessional indemnity is $4,750 plus $2,250 expense allowance and the Deputy Speaker's sessional indemnity is $4,000 plus $2,000 expense allowance. Each also receives $15 for each day during the session when he is necessarily absent from his ordinary place of residence. The Premier, in addition to the sessional indemnity, receives $14,000, other Ministers receive $11,000 and each member of the Opposition receives $625, there being no Opposition Leader in the present Legislature.

31.—Legislatures of Alberta, 1935-60, as at Jan. 1, 1961

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 82, and for 1924–34 in the 1938 edition, p. 117.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Aug. 22, 1935	8th	9	Feb. 6, 1936	Feb. 16, 1940
Mar. 21, 1940	9th	4	Feb. 20, 1941	July 7, 1944
Aug. 8, 1944	10th	5	Feb. 22, 1945	July 16, 1948
Aug. 17, 1948	11th	5	Feb. 17, 1949	June 28, 1952
Aug. 5, 1952	12th	3	Feb. 19, 1953	May 12, 1955
June 29, 1955	13th	5	Aug. 17, 1955	May 9, 1959
June 18, 1959	14th	[1]	Feb. 11, 1960	[1]

[1] Life of Legislature not expired at Jan. 1, 1961.

32.—Eighth Ministry of Alberta, as at Jan. 1, 1961

(Party standing at latest General Election, June 18, 1959: 61 Social Credit, 1 Liberal, 1 Progressive Conservative, 1 Coalition and 1 Independent Social Credit.)

NOTE.—Ministers are shown at date of original appointment as a Minister and at date of appointment to present portfolio, despite the formation of a new Ministry consequent upon the appointment of a new Premier.

Office	Name	Date of First Appointment	Date of Present Appointment[1]
Premier, President of Council, Minister of Mines and Minerals, and Attorney General	Hon. ERNEST C. MANNING	Sept. 3, 1935	May 31, 1943 Sept. 16, 1952 Aug. 2, 1955
Minister of Municipal Affairs	Hon. ALFRED J. HOOKE	Apr. 20, 1945	Aug. 2, 1955
Minister of Highways	Hon. GORDON E. TAYLOR	Dec. 27, 1950	May 1, 1951
Minister of Education	Hon. ANDERS O. AALBORG	Sept. 9, 1952	Sept. 9, 1952
Minister of Agriculture	Hon. LEONARD C. HALMRAST	Jan. 3, 1953	Jan. 5, 1954
Minister of Lands and Forests	Hon. NORMAN A. WILLMORE	Nov. 10, 1953	Aug. 2, 1955
Minister of Public Welfare	Hon. ROBIN D. JORGENSON	Jan. 5, 1954	Jan. 5, 1954
Provincial Treasurer	Hon. EDGAR W. HINMAN	Dec. 23, 1954	Aug. 2, 1955
Minister of Public Works	Hon. JAMES HARTLEY	Aug. 2, 1955	Aug. 2, 1955
Minister without Portfolio	Hon. FRED. C. COLBORNE	Aug. 2, 1955	Aug. 2, 1955
Minister of Industry and Development and Provincial Secretary	Hon. A. RUSSELL PATRICK	Aug. 2, 1955	Sept. 1, 1959
Minister of Labour and Minister of Telephones	Hon. RAYMOND REIERSON	Aug. 2, 1955	Sept. 22, 1959
Minister of Health	Hon. DR. J. DONOVAN ROSS	Sept. 18, 1957	Sept. 18, 1957

[1] Minister not necessarily sworn in on date of appointment.

Subsection 10.—British Columbia

The Government of British Columbia has a Lieutenant-Governor, an Executive Council and a Legislative Assembly. Maj.-Gen. the Hon. George Randolph Pearkes, Lieutenant-Governor at Jan. 1, 1961, was commissioned to office Oct. 13, 1960. Lieutenant-Governors from Confederation (1871) to 1959 are cited in the 1960 Year Book, p. 118.

The Legislative Assembly, elected for a statutory term of five years, has 52 members. Premiers since Confederation are listed in the 1960 Year Book, p. 118.

Each member of the Executive Council and the Legislative Assembly receives a sessional allowance of $3,400 and $1,000 for expenses. There is also paid to each member a living allowance of $15 for each day's attendance at the session and for each Saturday, Sunday or holiday that intervenes between two sittings of the House; the allowance of $15 in any session is not paid in respect of more than 40 days. Each member also receives an allowance of 25 cents per mile of the distance between his place of residence and the city of Victoria, reckoning such distance, going and coming, according to the nearest mail route. In addition, the Premier receives a salary of $15,000 and each member of the Executive Council $12,500. The Leader of the Opposition has a special allowance of $3,500 for expenses, the Speaker receives a special allowance of $3,500 and the Deputy Speaker an allowance of $1,000.

33.—Legislatures of British Columbia, 1937-60, as at Jan. 1, 1961

Note.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 83, and for 1924-37 in the 1938 edition, p. 118.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
June 1, 1937	19th	5	Oct. 26, 1937	July 22, 1941
Oct. 21, 1941	20th	4	Dec. 4, 1941	Aug. 31, 1945
Oct. 25, 1945	21st	5	Feb. 21, 1946	Apr. 16, 1949
June 15, 1949	22nd	4	Feb. 14, 1950	Apr. 10, 1952
June 12, 1952	23rd	1	Feb. 3, 1953	Mar. 27, 1953
June 9, 1953	24th	4	Sept. 15, 1953	Aug. 13, 1956
Sept. 19, 1956	25th	4	Feb. 7, 1957	Aug. 3, 1960
Sept. 12, 1960	26th	[1]	Jan. 26, 1961	[1]

[1] Life of Legislature not expired at Jan. 1, 1961.

34.—Twenty-Sixth Ministry of British Columbia, as at Jan. 1, 1961

(Party standing at latest General Election, Sept. 12, 1960: 32 Social Credit, 16 Co-operative Commonwealth Federation, and 4 Liberal.)

Note.—Ministers are shown at date of original appointment as a Minister and at date of appointment to present portfolio, despite the formation of a new Ministry consequent upon the appointment of a new Premier.

Office	Name	Date of First Appointment	Date of Present Appointment[1]
Premier, President of the Council and Minister of Finance.	Hon. William Andrew Cecil Bennett	Aug. 1, 1952	Feb. 15, 1954
Provincial Secretary, Minister of Municipal Affairs, and Minister of Social Welfare	Hon. Wesley Drewett Black	Aug. 1, 1952	Mar. 20, 1959
Attorney General and Minister of Industrial Development, Trade, and Commerce	Hon. Robert William Bonner	Aug. 1, 1952	Mar. 28, 1957
Minister of Lands and Forests	Hon. Ray Gillis Williston	Apr. 14, 1954	Feb. 28, 1956
Minister of Agriculture	Hon. Francis Xavier Richter	Nov. 28, 1960	Nov. 28, 1960
Minister of Mines and Petroleum Resources	Hon. William Kenneth Kiernan	Aug. 1, 1952	Mar. 18, 1960
Minister of Highways	Hon. Philip Arthur Gaglardi	Aug. 1, 1952	Mar. 15, 1955
Minister of Labour and Minister of Education	Hon. Leslie Raymond Peterson	Sept. 27, 1956	Nov. 28, 1960
Minister of Health Services and Hospital Insurance.	Hon. Eric Charles Fitzgerald Martin	Aug. 1, 1952	Mar. 20, 1959
Minister of Public Works	Hon. William Neelands Chant	Mar. 15, 1955	Mar. 15, 1955
Minister of Recreation and Conservation and Minister of Commercial Transport	Hon. Earle Cathers Westwood	Sept. 27, 1956	Nov. 28, 1960
Member of Executive Council without Portfolio	Hon. Buda Hosmer Brown	Nov. 28, 1960	Nov. 28, 1960

[1] Minister not necessarily sworn in on date of appointment.

Subsection 11.—Yukon and Northwest Territories

Yukon Territory.—The Yukon was created a separate Territory in June 1898. Provision is made for a local government administered by a Commissioner appointed by the Governor in Council. There is an elected Council. An amendment to the Yukon Act in 1960 provides for seven Councillors instead of the former five and a Territorial Ordinance passed at the Third Session 1960 provides for seven electoral districts. The first election under these laws will be held in 1961. The Commissioner administers the Government under instructions from the Governor in Council or the Minister of Northern Affairs and National Resources. The Commissioner in Council has power to make ordinances dealing with the imposition of local taxes, sale of liquor, preservation of game, establishment of territorial offices, maintenance of municipal institutions, issue of licences, incorporation of companies, solemnization of marriage, property and civil rights, and generally all matters of a local nature in the Territory. The seat of local government is at Whitehorse, Yukon Territory.

GOVERNMENT OF THE YUKON TERRITORY
(as at Jan. 1, 1961)

(At Jan. 1, 1961 the Government consisted of an appointed Commissioner and a Council of five members elected in 1958 for a three-year term; the first election of the seven-member Council will be held in 1961.)

Commissioner	F. H. Collins
Members of Council—	
Dawson	G. Shaw
Carmacks-Kluane	G. Livesey
Whitehorse West	J. Smith
Mayo	R. L. McKamey
Whitehorse North	Vacant
Whitehorse East	C. D. Taylor
Watson Lake	Vacant
Officers of Council—	
Clerk	H. J. Taylor
Legal Adviser	F. R. Bickell

The Northern Administration Branch, Department of Northern Affairs and National Resources, has the responsibility for the general administration of the natural resources of the Yukon Territory, except game. The Department maintains three lands and mining offices at various points in the Territory. Other departments and agencies of the Federal Government, including the Department of Justice, the Royal Canadian Mounted Police, the Departments of National Defence, Citizenship and Immigration, Mines and Technical Surveys, National Revenue, Transport, Post Office, Agriculture, Fisheries, Public Works and the Unemployment Insurance Commission, also maintain offices in the Yukon Territory.*

Northwest Territories.—As reconstituted on Sept. 1, 1905, these comprise:—

(1) all that part of Canada north of the Sixtieth Parallel of North Latitude, except the portions thereof within the Yukon Territory and the Provinces of Quebec and Newfoundland, and

(2) the islands in Hudson Bay, James Bay and Ungava Bay, except those islands within the Provinces of Manitoba, Ontario and Quebec.

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* Further information on officials of various Federal Government departments serving Yukon Territory may be obtained from the Director, Northern Administration Branch, Department of Northern Affairs and National Resources, Ottawa.

The Northwest Territories Act (RSC 1952, c. 331) provides for the appointment of a Commissioner to administer the government of the Territories under instructions given from time to time by the Governor in Council or the Minister of Northern Affairs and National Resources. As a matter of practice, the appointment is held by the Deputy Minister of Northern Affairs and National Resources. For administrative purposes the Territories are divided into the provisional districts of Mackenzie, Keewatin and Franklin (Order in Council dated Mar. 16, 1918). The Northwest Territories Act, as amended, also provides for a Council of nine members, four of whom are elected in the Mackenzie District and five of whom are appointed by the Governor in Council. The Commissioner in Council has legislative powers respecting such matters as direct taxation, establishment and tenure of Territorial offices, municipal institutions, controverted elections, licences, incorporation of companies, property and civil rights, administration of justice, game, education, hospitals and generally all matters of a local or private nature. The Council meets once each year in the Territories and at least once each year in Ottawa, which is the seat of government. The resources, except game, remain under the control of the Federal Government. The administration of legislation passed by the Commissioner in Council and the management of resources under federal legislation are carried on by the Northern Administration Branch of the Department of Northern Affairs and National Resources. Administrative offices are located in the Territories at Fort Smith, Yellowknife, Hay River and Inuvik.

COUNCIL OF THE NORTHWEST TERRITORIES
(as at Jan. 12, 1961)

Commissioner	R. G. Robertson
Deputy Commissioner	W. G. Brown
Members of the Council—	
Appointed	L. A. Desrochers, H. M. Jones, W. G. Brown, D. M. Coolican and I. Norman Smith
Elected	K. Lang, J. W. Goodall, A. P. Carey, E. J. Gall
Officers of the Council—	
Secretary	G. A. MacKinnon
Legal Adviser	E. R. Olson

Section 3.—Municipal Government*

Municipal government in Canada is placed under the control of the provincial legislatures by the British North America Act, 1867. Thus the powers of municipalities are those delegated to them by statutes passed by their respective provincial governments, some of which apply to all municipalities within the province, some to a certain type or group, and many to one municipality only. Municipal powers are further defined by regulations issued (under the provisions of the Acts) by the provincial government departments charged with their supervision and control. In the Yukon and Northwest Territories some municipal powers have been assigned to certain localities by the Federal Government and the territorial councils.

While powers and responsibilities delegated to municipalities vary from province to province and even within a province, they are largely those of raising money locally, of borrowing, and of spending to provide local services. All provinces give financial assistance in some form, usually as subsidies or grants-in-aid of certain services administered by the municipalities, and often as loans on or guarantees of loans for capital projects. Retention or assumption of what are often regarded as municipal responsibilities is sometimes considered an indirect form of aid, as is the extension of taxing privileges into what may be commonly regarded as a provincial revenue field.

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* Prepared in the Public Finance and Transportation Division, Dominion Bureau of Statistics.

The major revenue source available to municipalities is property taxation. It is supplemented in varying degrees by taxation of personal property, business, persons (poll taxes), and tenants. In two provinces municipalities may levy an amusement tax, in three they may impose sales taxes on a limited basis, and in Quebec some cities have been granted the right to levy a general sales tax. Miscellaneous general revenue is derived from licences, permits, rents, concessions, franchises and fines. Most urban municipalities of any size operate utilities and enterprises for the provision of water and, in many instances, electricity, gas, transportation, telephone and other services. These sometimes provide surplus funds that may become available to help provide other municipal services. On the other hand, expenditures of municipalities often include provision for the deficits of utilities and enterprises.

In differing degree and with varying provincial assistance, municipalities are responsible for the following services: protection to persons and property through police and fire forces, courts and local gaols, and inspection services; roads and streets; sanitation; certain health and welfare services; and some recreation and other community services. Except in Quebec and Newfoundland and in a few minor localities where school authorities must raise funds for education not provided for by the province concerned, municipalities are responsible for levying and collecting local education taxes on property on behalf of the local schools, and often for borrowing capital funds for school construction. This stems from the traditional concept that education is a local responsibility, though it is now largely financed and administered by the provincial governments. Local administrative responsibility for education lies with boards of trustees separate from the councils that govern municipalities (except in Alberta; see p. 93).

In some localities, certain local services are administered by special district authorities encompassing a number of municipalities or parts of municipalities. These district authorities provide services, such as greater water and sewerage districts, drainage and irrigation districts, and health units, which elsewhere may be provided by the municipality directly or through a board or utility. They are, in effect, co-operative efforts or a modified form of metropolitan government. Metropolitan government is in existence in Toronto and partially in Montreal, and studies are under way for some other major cities, notably Winnipeg.

The following paragraphs describe municipal organization in each province as at Jan. 1, 1960. In Table **35**, which gives the number of each type of municipality in each province, all fully incorporated cities, towns and villages are regarded as urban municipalities. It is difficult to apply arbitrary definitions, such as that which classifies as urban centres all places having a population of 1,000 or more persons.

Newfoundland.—The Province of Newfoundland has two cities—St. John's and Corner Brook. A number of the province's many settlements have been organized into 33 towns, four rural districts, three local improvement districts and 35 local government communities. The towns, rural districts and local improvement districts operate under the Local Government Act; towns and rural districts have elected councils and local improvement districts have appointed trustees. Local government communities established under the Community Councils Act in the smaller settlements have limited powers and functions. There are no rural municipalities in the usual sense. Thus, between 40 p.c. and 50 p.c. of the population of the province is now organized in some form of local authority but only about one-fifth of 1 p.c. of the total area is so governed. Municipalities are supervised by the Department of Municipal Affairs and Supply.

Prince Edward Island.—In this island province, one city and seven towns have been incorporated under special Acts and 16 villages have been established under the Village Services Act. There is no municipal organization for the remainder of the province though it is divided into school sections.

Nova Scotia.—Municipal organization in Nova Scotia covers the whole of the province. The two cities, Halifax and Sydney, operate under special charters and special legislation. Forty towns operate under the Town Incorporation Act but there are no municipalities incorporated as villages. Cities and towns are independent of counties. The rural area is divided into 18 counties which, in themselves, do not represent units of local government. However, 12 of these counties each comprise one municipality and the other six each comprise two municipalities, making a total of 24 rural municipalities. Supervision of municipalities is exercised through the Department of Municipal Affairs.

New Brunswick.—This province is divided into 15 counties which are incorporated municipalities and have direct powers of local self-government as rural municipalities, though certain of their powers often apply in both rural and urban municipalities. The six cities have special charters, and the 20 towns operate under the Towns Incorporation Act. There is one village and 54 local improvement district areas within the counties but outside the cities, towns and villages; these have been incorporated for the provision of limited municipal services. The Department of Municipal Affairs exercises supervision.

Quebec.—Municipal divisions in Quebec embrace the more thickly settled areas comprising about one-third of the province and the remainder is governed by the province as "territories". The organized area is divided into 74 county municipalities which are divided again into local municipalities and designated as village, township or parish municipalities or simply as municipalities. The counties as such have no direct powers of taxation. Funds to finance the services falling within their jurisdiction are provided by the municipalities forming part thereof. Parts of some counties are not yet organized into incorporated units of local government, being in outlying areas with little or no population. There are 336 villages and 1,120 townships and parishes. A small number of these are independent of the counties in which they are located. The Municipal Code governs local municipalities, and the 54 cities and 162 towns have special Acts. The supervision and assistance of municipalities is through the Department of Municipal Affairs and the Quebec Municipal Commission. Municipal statistics are gathered by the Quebec Bureau of Statistics.

Functions of the Montreal Metropolitan Commission, established in 1921 to assist municipalities of greater Montreal which had experienced some degree of financial difficulty, were transferred at the end of 1959 to the Montreal Metropolitan Corporation; it is intended that, eventually, the Corporation will take on more of the functions of an over-all metropolitan administration.

The County of Laval was replaced in March 1959 by the Interurban Corporation of Île Jésus in order to facilitate solution of inter-municipal problems on the island.

Ontario.—Slightly more than one-tenth of the area of Ontario is municipally organized and the remainder is governed entirely by the provincial government. The older settled section of the province is divided into 43 counties, five of which are united with others for administrative purposes. Each county, although it is an incorporated municipality, is comprised of the towns, villages and townships situated within its borders, and these provide its revenue. The Municipality of Metropolitan Toronto encompasses one city, four towns, three villages and five townships. There are 30 cities, 158 towns, 154 villages, 575 townships and 20 improvement districts in the province. Some of each are located in the northern districts which are not organized into counties. Supervisory control of municipalities is exercised by the Department of Municipal Affairs and the Ontario Municipal Board under the Municipal Act and other Acts governing aspects of municipal government.

Manitoba.—Manitoba has six cities, which derive their powers from special Acts and do not come under the supervision of the Department of Municipal Affairs. The Department supervises the 35 towns, 37 villages and 112 rural municipalities under the Municipal Act. There are local government districts in settled areas not within rural municipalities.

Saskatchewan.—All municipalities in Saskatchewan derive their powers from general Acts that are designated with the name of the type of municipality. There are 10 cities, 106 towns, 371 villages and 296 rural municipalities. The area so organized consists of most of the southern two-fifths of the province—the remainder of this portion is administered for local purposes by the province in unincorporated local improvement districts. The northern three-fifths is sparsely populated and without local government, though some municipal services are provided by the province through operation of the Northern Administrative Area. Municipalities are supervised by the Department of Municipal Affairs.

Alberta.—The province has an Act applying to each type of municipality, and under these Acts the Department of Municipal Affairs supervises the 10 cities, 87 towns, 157 villages, 36 municipal districts and 12 counties. The latter administer schools as well as municipal services.

British Columbia.—Less than one-half of 1 p.c. of the area of British Columbia is organized into municipalities. Additional small areas have sufficient population to require administration of local activities by the provincial government. There are 32 cities, three towns, 57 villages, and 31 districts; the latter are chiefly rural municipalities, except for those adjacent to the principal cities of Victoria and Vancouver which are largely urban in character. It should be emphasized, however, that the application of the name "city" is somewhat different from the commonly accepted meaning, in that several of them have populations of fewer than 1,000 and perhaps one-half or more would not normally be incorporated as cities in another province. Legislation of 1957 provided for the incorporation of towns; by the beginning of 1959 three villages had attained town status and three cities had reverted to village status. Municipalities are supervised by the Department of Municipal Affairs.

Yukon and Northwest Territories.—There are two cities and one town in the Yukon Territory and two local administrative districts in the Northwest Territories, all of which provide some municipal services to their local areas. These are not shown in Table **35**.

35.—Official Designation and Statistical Classification of Municipalities, by Province, as at Jan. 1, 1960

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
	OFFICIAL DESIGNATION[1]										
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Local municipalities	77	24	66	42[3]	1,673	938	190	783	302	123	4,218
Metropolitan corporations	—	—	—	—	*1*	*1*	—	—	—	—	*2*
Cities	*2*	*1*	*2*	*6*	*54*	*30*	*6*	*10*	*10*	*32*	*153*
Towns	*40*[4]	*7*	*40*	*20*	*162*	*158*	*35*	*106*	*87*	*3*	*658*
Villages	*35*[5]	*16*	...	*1*	*336*	*154*	*37*	*371*	*157*	*57*	*1,164*
Rural[6]	...	...	*24*	*15*	*1,120*	*595*[7]	*112*[8]	*296*[9]	*48*[10]	*31*[11]	*2,241*
Quebec and Ontario counties	...	...	...	...	75[12]	38	...	...	...	...	113
Totals, Incorporated Municipalities	**77**	**24**	**66**	**42**	**1,748**	**976**	**190**	**783**	**302**	**123**	**4,331**

For footnotes, see end of table, p. 94.

35.—Official Designation and Statistical Classification of Municipalities, by Province, as at Jan. 1, 1960—concluded

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
	STATISTICAL CLASSIFICATION[2]										
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Municipalities in metropolitan areas[13]	2	...	3	5	77	39	14	...	11	19	170
Urban[14]	*2*	...	*2*	*3*	*59*	*23*	*7*	...	*6*	*7*	*109*
Rural	...	...	*1*	*2*	*18*	*16*	*7*	...	*5*	*12*	*61*
Other urban municipalities	75	24	40	24	494	320	71	487	248	85	1,868
Other rural municipalities	...	...	23	13	1,102	579	105	296	43	19	2,180
Semi-urban	...	...	...	...	...	*56*[15]	...	...	...	...	*56*
Other	...	...	*23*	*13*	*1,102*	*523*	*105*	*296*	*43*	*19*	*2,124*
Quebec and Ontario counties	...	...	...	...	75	38	...	...	...	...	113
Totals, Incorporated Municipalities	**77**	**24**	**66**	**42**	**1,748**	**976**	**190**	**783**	**302**	**123**	**4,331**

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[1] Municipalities grouped according to their official nomenclature, which is roughly indicative of size and nature (see footnote 6). [2] Municipalities grouped under the classification devised by the Dominion-Provincial Conferences on Municipal Statistics, designed to bring municipalities into comparable groups for statistical presentation. [3] Excludes local improvement districts. [4] Designated by the province as towns (33), rural district (4), and local improvement districts (3); all operate under the same Act. [5] Classified by the province as "community councils". [6] Rural municipalities are designated by different names in the different provinces. [7] Includes 20 improvement districts. [8] Includes 3 units of self-government known as "Suburban municipalities"; excludes local government districts. [9] Excludes 12 local improvement districts. [10] Includes 12 county municipalities; excludes improvement districts and special areas. [11] Excludes 2 local districts. [12] Includes the Interurban Corporation of Île Jésus. [13] Includes municipalities shown wholly or partly in metropolitan areas by the 1956 Census, up-dated to take care of annexations, etc. [14] Includes the Montreal Metropolitan Corporation and the Municipality of Metropolitan Toronto. [15] Classed by provincial authorities as suburban and semi-urban.

Section 4.—Federal and Provincial Royal Commissions

Federal Royal Commissions Established.—Royal Commissions established from Jan. 1, 1960 to Jan. 1, 1961 under Part I of the Federal Inquiries Act are given here in continuation of those previously reported in the Year Books beginning with the 1940 edition, pp. 1108-1110. Any Commissions established between Jan. 1, 1961 and the date of going to press will be found in an Appendix to this volume.

Nature of Commission	*Commissioner*	*Date Established*
To inquire into the situation of and prospects for the industries in Canada producing motor vehicles and parts therefor.	VINCENT W. BLADEN	Aug. 2, 1960
To inquire into complaints received concerning certain activities of Station CHEK-TV, B.C.	ANDREW STEWART	Sept. 6, 1960
To inquire into and report upon the means of promoting efficiency, economy and improved service in the operation of the departments and agencies of the government.	J. GRANT GLASSCO	Sept. 16, 1960
To inquire into and report upon the recent and present position of and prospects for Canadian magazines and other periodicals.	M. GRATTAN O'LEARY	Sept. 16, 1960

Reports of Federal Royal Commissions.—Reports of federal Royal Commissions issued during the year 1960 were as follows.

Royal Commission on Patents, Copyrights and Industrial Designs, established June 10, 1954: Report on patents of invention, Dec. 31, 1959. Ottawa 1960. 196p. $2. (Cat. No. Z1-1954/2).

Royal Commission on Energy, established Oct. 15, 1957: Second Report, July 1959. Ottawa 1960. 189 p. $2. (Cat. No. Z1-1957/3-2).

Royal Commission on Price Spreads of Food Products, established Dec. 10, 1957: Vol. 3, March 1960 Ottawa 1960. 565p. $2. (Cat. No. Z1-1957/4-3).

Royal Commission on the Great Slave Lake Railway, established June 4, 1959: Vol. 1—Introduction, reports of Commissioners, June 1960. Ottawa 1960. 113p. $1.50. (Cat. No. Z1-1959/1-1).

Royal Commission on Coal, established Oct. 6, 1959: Report, Ottawa, August 1960. 127p. $2. (Cat. No. Z1-1959/2).

Royal Commission on the Great Slave Lake Railway, established June 4, 1959: Vol. 2—Factual and statistical material, July 1960. Ottawa 1960. 197p. $2. (Cat. No. Z1-1959/1-2).

Provincial Royal Commissions.—The following provincial Royal Commissions were established during the year 1960.

Province and Nature of Commission	*Commissioner or Chairman*	*Date Established*
NEWFOUNDLAND		
To inquire into the logging industry	Hon. Sir B. E. S. DUNFIELD	Aug. 25, 1960
NEW BRUNSWICK		
To inquire into the liquor laws of the province.	Mr. Justice G. F. C. BRIDGES	Nov. 30, 1960
QUEBEC		
To make an inquiry upon the facts and circumstances which preceded and followed the sale of Quebec Hydro gas network to the Corporation of Natural Gas of Quebec.	His Hon. Judge ELIE SALVAS	Oct. 5, 1960
ONTARIO		
To inquire into the purchase and acquisition by The Hydro-Electric Power Commission of Ontario of certain lands within the Sarnia Indian Reserve Number 45 from Dimensional Investments Limited.	Mr. Justice GEORGE ARGO MCGILLIVRAY	Feb. 23, 1960
To inquire into and report upon all statutes and regulations administered by the Department of Labour that govern the safety of workers with a view to the improvement, simplification, clarification and modernization of such statutes and regulations.	His Hon. Judge P. J. MCANDREW	Apr. 7, 1960
To inquire into and report upon all matters relating to the purchase by the Niagara Parks Commission of parts of Lot 23, Township of Niagara, County of Lincoln, and the sale of part of said lands to Arthur Albert Schmon, and the subsequent sale of a part of said lands by Mr. Schmon to Charles and Leola Daley.	His Hon. IAN MCLEAN MACDONELL	Apr. 11, 1960
MANITOBA		
To inquire into judicial boundaries	The Hon. Mr. Justice CALVERT CHARLTON MILLER	July 21, 1960
To inquire into all facts and matters respecting the provision of surgical and medical care to recipients of social allowances and its effect upon the teaching of medical students in Manitoba.	HAROLD J. RILEY	Oct. 13, 1960
BRITISH COLUMBIA		
Committee advisory to the Executive Council on the general subject of energy, its development and application to the requirements of the people and industry of British Columbia (named the British Columbia Energy Board).	GORDON MERRITT SHRUM	Jan. 11, 1960

PART III.—ADMINISTRATIVE FUNCTIONS OF THE FEDERAL GOVERNMENT*

A special article presenting information on the administration and control of the financial affairs of the Federal Government appears in the 1956 Year Book at pp. 101-107.

Section 1.—Departments, Boards, Commissions, etc.

The following paragraphs indicate the functions of the various departments of government and the special boards and commissions in connection with the work of government.

Though it is not possible, owing to the limitations of space, to enumerate in this Section the details of each service or the divisions or sections of all departments, the main branches are given along with those services that differ in some quality from the larger class of subjects handled by a department. The work of many of these departments and boards is given in detail in later Chapters of this volume. The Index will be useful in locating required information.

Department of Agriculture.—This Department was established in 1867 (SC 1868, c. 53) and undertakes work on all phases of agriculture. Research and experimentation are carried out by the Research Branch; the maintenance of standards and protection of products by the Production and Marketing Branch; reclamation and development by the Prairie Farm Rehabilitation Administration and the Maritime Marshland Rehabilitation Administration; security and price stability policies are administered under the Prairie Farm Assistance Administration and Agricultural Stabilization Board. The Farm Credit Corporation, the Canadian Wheat Board and the Board of Grain Commissioners are responsible to Parliament through the Minister of Agriculture.

Air Transport Board.—The Air Transport Board was established in 1944 by amendment of the Aeronautics Act. The Board is responsible for the economic regulation of commercial air services in Canada. The regulatory function relates to Canadian air services within Canada and abroad, and to foreign air services operating into Canada. It involves the licensing of all such services and the subsequent regulation of the licensees in respect of their economic operation and the provision of service to the public. The Board reports to Parliament through the Minister of Transport.

Auditor General's Office.—This Office originated in 1878 (SC 1878, c. 7) and currently functions under the Financial Administration Act (RSC 1952, c. 116). The Auditor General is responsible for examining accounts relating to the Consolidated Revenue Fund and to public property, and for reporting annually to the House of Commons the results of his examinations. He also audits the accounts of various Crown corporations and other instrumentalities.

Board of Broadcast Governors.—This Board was established pursuant to the Broadcasting Act assented to on Sept. 6, 1958 and is responsible for the regulation of radio and television broadcasting in Canada. This regulatory function includes the establishment and operations of networks of broadcasting stations, the activities of public and private broadcasting stations in Canada and the relationship between them. Applications for licences to establish new broadcasting stations and for changes in conditions of existing licences or changes in the ownership or share structure of licensees are referred to the Board by the Department of Transport for a recommendation to the Minister of Transport. The Board consists of three full-time members and twelve part-time members and reports to Parliament through the Minister of National Revenue.

Board of Grain Commissioners.—Constituted in 1912 under the Canada Grain Act, now the Canada Grain Act, 1930 (RSC 1952, c. 25), the Board of Grain Commissioners provides general supervision over grain handling in Canada by licensing elevator operators, inspecting and weighing grain en route to and shipped from terminal elevators, and other services. The Board, comprising a Chief Commissioner and two Commissioners, has authority to inquire into any matter relating to the grading and weighing of grain, deductions for dockage or shrinkage, deterioration of any grain during storage or treatment, unfair or discriminatory operation of a grain elevator, etc. The Board publishes its regulations in the *Canada Gazette* and reports to Parliament through the Minister of Agriculture.

Board of Transport Commissioners.—The powers of this Board, which was organized as the Board of Railway Commissioners in 1904, have been extended from time to time until today it has regulatory and judicial functions dealing with almost all aspects of railway activity including

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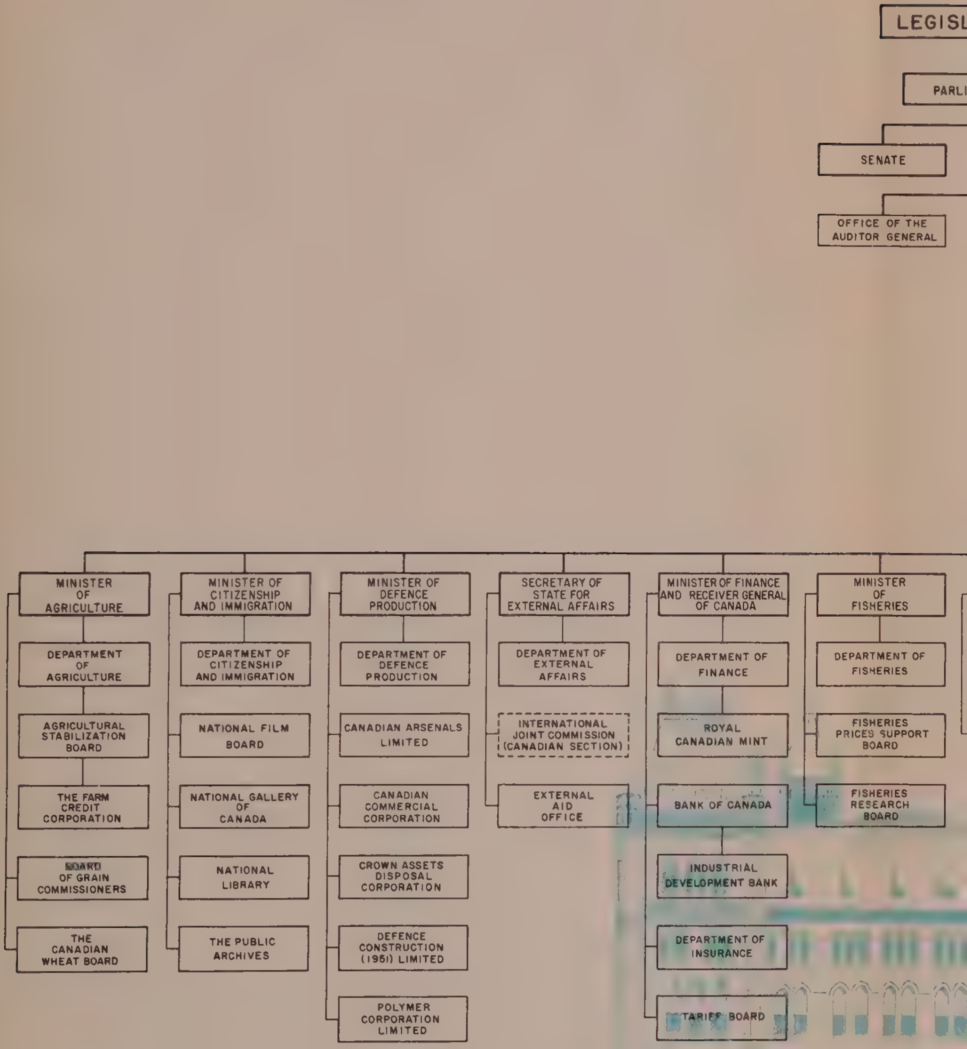
* As at Jan. 1, 1961; any major changes taking place between that date and the time of going to press will be carried in an Appendix to this volume.


LEGISL
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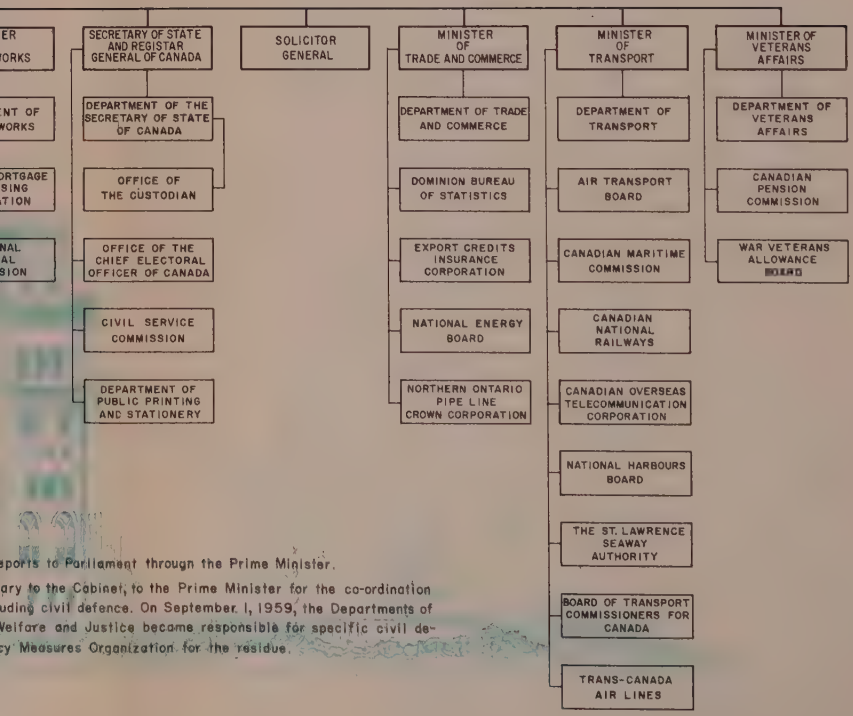
SENATE
OFFICE OF THE AUDITOR GENERAL
MINISTER OF AGRICULTURE
DEPARTMENT OF AGRICULTURE
AGRICULTURAL STABILIZATION BOARD
THE FARM CREDIT CORPORATION
BOARD OF GRAIN COMMISSIONERS
THE CANADIAN WHEAT BOARD
MINISTER OF CITIZENSHIP AND IMMIGRATION
DEPARTMENT OF CITIZENSHIP AND IMMIGRATION
NATIONAL FILM BOARD
NATIONAL GALLERY OF CANADA
NATIONAL LIBRARY
THE PUBLIC ARCHIVES
MINISTER OF DEFENCE PRODUCTION
DEPARTMENT OF DEFENCE PRODUCTION
CANADIAN ARSENALS LIMITED
CANADIAN COMMERCIAL CORPORATION
CROWN ASSETS DISPOSAL CORPORATION
DEFENCE CONSTRUCTION (1951) LIMITED
POLYMER CORPORATION LIMITED
SECRETARY OF STATE FOR EXTERNAL AFFAIRS
DEPARTMENT OF EXTERNAL AFFAIRS
INTERNATIONAL JOINT COMMISSION (CANADIAN SECTION)
EXTERNAL AID OFFICE
MINISTER OF FINANCE AND RECEIVER GENERAL OF CANADA
DEPARTMENT OF FINANCE
ROYAL CANADIAN MINT
BANK OF CANADA
INDUSTRIAL DEVELOPMENT BANK
DEPARTMENT OF INSURANCE
TARIFF BOARD
MINISTER OF FISHERIES
DEPARTMENT OF FISHERIES
FISHERIES PRICES SUPPORT BOARD
FISHERIES RESEARCH BOARD

NOTE: Lines of responsibility are often inconclusive, since certain semi-independent agencies, though each responsible to a Minister of the Crown, are administered as departmental branches.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CIVIL SERVICE COMMISSION
DEPARTMENT OF PUBLIC PRINTING AND STATIONERY
DEPARTMENT OF TRADE AND COMMERCE
DOMINION BUREAU OF STATISTICS
EXPORT CREDITS INSURANCE CORPORATION
NATIONAL ENERGY BOARD
NORTHERN ONTARIO PIPE LINE CROWN CORPORATION
DEPARTMENT OF TRANSPORT
AIR TRANSPORT BOARD
CANADIAN MARITIME COMMISSION
CANADIAN NATIONAL RAILWAYS
CANADIAN OVERSEAS TELECOMMUNICATION CORPORATION
NATIONAL HARBOURS BOARD
THE ST. LAWRENCE SEAWAY AUTHORITY
BOARD OF TRANSPORT COMMISSIONERS FOR CANADA
TRANS-CANADA AIR LINES
DEPARTMENT OF VETERANS AFFAIRS
CANADIAN PENSION COMMISSION
WAR VETERANS ALLOWANCE BOARD

eports to Parliament through the Prime Minister.

ary to the Cabinet, to the Prime Minister for the co-ordination
uding civil defence. On September 1, 1959, the Departments of
Velfare and Justice became responsible for specific civil de-
cy Measures Organization for the residue.

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location, construction and operation of lines, rates and charges. It is also entrusted with the regulation of other transportation and communication agencies, including express companies, telegraph companies, telephone companies other than those provincially or municipally controlled, international bridges and tunnels and inland shipping. The Board reports to Parliament through the Minister of Transport.

Canadian Government Specifications Board.—This is an interdepartmental body composed of the Deputy Heads of 24 Federal Government departments and agencies. The Board operates under the auspices of the National Research Council, through the medium of committees in which government and industry co-operate on a voluntary basis. The Board prepares specifications in commodity fields and for materials, processes and equipment required by government agencies, and arranges for necessary testing and research. An Index of Specifications is available on request to the CGSB Secretary, National Research Council, Ottawa.

Chief Electoral Office.—This Office was established in 1920 under the provisions of the Dominion Elections Act, now the Canada Elections Act (RSC 1952, c. 23), and amendments thereto, and is responsible for the conduct of all federal elections as well as the elections of members of the Northwest Territories Council and of the Yukon Territory Council. In addition it conducts any vote taken under the Canada Temperance Act. The Chief Electoral Officer reports to Parliament through the Secretary of State.

Department of Citizenship and Immigration.—This Department was constituted in December 1949 (RSC 1952, c. 67) and came into existence on Jan. 18, 1950 under the Minister of Citizenship and Immigration. Most departmental work is carried on through four branches. The Canadian Citizenship Branch assists governmental and non-governmental agencies engaged or interested in facilitating the adjustment and integration of newcomers and in making Canadians conscious of their privileges and responsibilities as citizens. The Canadian Citizenship Registration Branch administers the Canadian Citizenship Act and is the custodian of all records under that Act and all Naturalization Acts previously in force. The Immigration Branch administers the Immigration Act and Regulations and is responsible for the selection, examination and movement of immigrants, the exclusion or deportation of undesirables and the settlement or establishment of immigrants in Canada. The activities of the Indian Affairs Branch include management of all Indian affairs. Its organization consists of a headquarters office at Ottawa, a regional supervisory staff, and 89 local agencies in the field.

The Minister of Citizenship and Immigration is responsible to Parliament for the National Film Board, the National Library, the Public Archives, and the National Gallery of Canada.

Civil Service Commission.—The Civil Service Commission of Canada dates from the Civil Service Act of 1908. Under this Act the Commission was given the responsibility of applying, wherever possible, the principle of appointment by merit in filling permanent positions within departmental headquarters positions at Ottawa, termed the 'inside service'.

The Civil Service Act, 1918 extended the competitive system of appointments to cover the outside as well as the inside service and temporary as well as permanent appointments. It made the Commission responsible for establishing a system of organization and classification that would secure uniformity in the staffing of the various departments and in the salaries paid for work of equal levels of difficulty and responsibility.

The jurisdiction of the Commission now extends to all departments of the Federal Government and to a large number of boards and commissions, exclusive of Crown corporations.

The Civil Service Commission, which is responsible not to the executive government but only to Parliament, consists of three members, one of whom serves as chairman. Each member of the Commission is appointed by the Governor in Council for a term of ten years and each has the rank and standing of a Deputy Minister. The Commission has a staff of approximately 660 persons located in the headquarters office at Ottawa and in district offices at St. John's, Nfld., Halifax, N.S., Saint John, N.B., Montreal, Que., Toronto, Ont., Winnipeg, Man., Regina, Sask., Edmonton, Alta., and Vancouver, B.C.

Department of Defence Production.—This Department was established on Apr. 1, 1951 under the provisions of the Defence Production Act (RSC 1952, c. 62, as amended). Under this Act the Minister is given, with certain exceptions, authority to buy defence supplies and construct defence projects required by the Department of National Defence. The Minister may, if authorized by the Governor General in Council, undertake for an associated government anything he may undertake for the Canadian Government. In addition, all powers, duties and functions that theretofore were vested in the Minister of Trade and Commerce under any contract, agreement, lease or other writing entered into pursuant to the Department of Munitions and Supply Act, 1939, or the Defence Supplies Act, 1950, are vested in the Minister of Defence Production.

Broadly, the Department's functions are to procure military goods, to construct defence installations and to organize industry for defence as required on behalf of the Department of National Defence, other government departments, and associated governments; to promote the expansion of defence production facilities and the development of defence-supporting industries particularly of strategic resources important for the defence of Canada and its allies; and to ensure adequate supplies of essential materials and services for defence requirements. The main procurement units of the Department are five production branches—Aircraft, Armament, Electronics, Machine Tool and Shipbuilding—and a General Purchasing Branch. Major offices for foreign procurement are located at London, England, and Washington, U.S.A.; the General Purchasing Branch has 14 district purchasing offices located throughout Canada for local or urgent procurement. In addition, there are various service branches which include Administration, Comptroller's, Economics and Statistics, Financial Adviser's, Industrial Security, Legal, and Secretary's. An Emergency Supply Planning Branch has been established to plan economic controls for a national emergency.

The following Crown companies report to Parliament through the Minister of Defence Production: Canadian Arsenals Limited, Canadian Commercial Corporation, Crown Assets Disposal Corporation, Defence Construction (1951) Limited, and Polymer Corporation Limited.

Dominion Bureau of Statistics.—The Dominion Bureau of Statistics was set up by statute in 1918 as a central statistical department for Canada (SC 1918, c. 43). In 1948 this statute, which had been consolidated as the Statistics Act (RSC 1927, c. 190), was repealed and replaced by the Statistics Act (RSC 1952, c. 257); it was amended by SC 1952-53, c. 18, assented to Mar. 31, 1953.

The function of the Dominion Bureau of Statistics is to compile, analyse and publish statistical information relative to the commercial, industrial, financial, social and general condition of the people and to conduct a census of population and agriculture of Canada as required under the Act.

The Bureau is a major publication agency of the Federal Government; the subjects of its reports cover all aspects of the national economy. The administrative head of the Bureau is the Dominion Statistician who reports to Parliament through the Minister of Trade and Commerce.

Emergency Measures Organization.—This Organization is a section of the Privy Council Office, established in June 1957 for the purpose of co-ordinating civil emergency planning. On Sept. 1, 1959, the Departments of National Defence, Health and Welfare, and Justice became responsible for specific civil defence functions; the Emergency Measures Organization for all other aspects of planning civil emergency measures. The Organization is responsible, through the Secretary of the Cabinet, to the Prime Minister.

Department of External Affairs.—This Department was established in 1909 by "An Act to create a Department of External Affairs" (RSC 1952, c. 68). Its main function is the protection and advancement of Canadian interests abroad. The head of the Department of External Affairs is the Secretary of State for External Affairs. The senior permanent officer of the Department is the Under-Secretary (Deputy Minister) who is the chief adviser to the Secretary of State for External Affairs. He is assisted by a Deputy Under-Secretary who is Legal Adviser and by four Assistant Under-Secretaries, and is advised by officers in charge of the various divisions, each responsible for a part of the work of the Department. The divisional heads are assisted by Foreign Service Officers, Administrative Officers and by an administrative staff. Officers serving abroad are formally designated as High Commissioners, Ambassadors, Ministers, Counsellors, First, Second, Third Secretaries and Attachés at diplomatic posts and as Consuls General, Consuls and Vice-Consuls at consular posts. About 65 diplomatic and consular posts are maintained abroad.

The work of the Department at Ottawa is performed by 20 divisions, which may be grouped according to their functions into three categories—area, functional and administrative. There are six area divisions—Commonwealth, European, Latin American, African and Middle Eastern, Far Eastern, and United States; ten functional divisions—Communications, Consular, Defence Liaison (1) and (2), Economic, Information, Legal, Historical, Protocol and United Nations; and four administrative divisions—Administrative Services, Finance, Personnel, and Supplies and Properties. There are also two smaller sections—Inspection Service and Liaison Services.

Department of Finance.—This Department was created by Act of Parliament in 1869 and now operates under the Financial Administration Act (RSC 1952, c. 116). The Department is responsible for the financial administration of Canada including raising the money required for the various governmental activities by way of taxation or borrowing. The Comptroller of the Treasury, an officer of the Department, is responsible for all Government disbursements. The work of the Department is organized in six principal divisions: Administration, Economic and International Affairs, Federal-Provincial Relations, Farm Improvement Loans, Taxation, and Treasury Board. The Royal Canadian Mint is a branch of the Department and the Inspector General of Banks is an officer of the Department.

The Tariff Board is responsible to Parliament through the Minister of Finance.

Department of Fisheries.—The Department of Fisheries was first organized under a Minister of Fisheries in 1930. Prior to that date the federal fisheries services were maintained by the former Department of Marine and Fisheries, established in 1868. The provinces, under various arrangements, have certain administrative responsibilities in the fisheries but the legislative authority for the regulations of coastal and freshwater fisheries is with the federal Department of Fisheries.

The work of the Department includes: conservation and development of the fisheries through the enforcement of fishing regulations, the operation of fish culture establishments, management and improvement of spawning streams and control of predators; inspection of fish products for quality control and the encouragement of industrial development; promotion of the greatest utilization of fishery products and a proper public understanding of the resource and the industry. The Department administers the Fishermen's Indemnity Plan to assist fishermen in the event of loss or serious damage to their fishing vessels or lobster traps.

Agencies connected with the Department are the Fisheries Prices Support Board and the Fisheries Research Board of Canada. The Department is represented on the following international commissions: Pacific Salmon Fisheries, Pacific Halibut, the Northwest Atlantic Fisheries, North Pacific Fisheries, Whaling, Great Lakes Fishery, and North Pacific Fur Seal.

Fisheries Research Board.—The Fisheries Research Board operates under the Fisheries Research Board Act of 1937 (amended in 1947 and 1952-53). It has been active as a fisheries research body since 1898, first as the Board of Management of the Canadian Marine Biological Station and later (1912) as the Biological Board of Canada.

The Board operates under the Minister of Fisheries and membership consists of a full-time chairman and not more than 18 other members. The majority of Board members are scientists, and other members are representative of the fishing industry and the Department of Fisheries.

The Board operates four biological stations and an Arctic Unit across Canada, also three technological stations with two technological application units and two oceanographic groups. It serves as the scientific arm of the Department of Fisheries and its principal objective is to increase the scope and value of Canadian fisheries through scientific research.

Department of Forestry.—The Department of Forestry was established in October 1960. It brings together the former Forestry Branch of the Department of Northern Affairs and National Resources and the Forest Biology Division of the Research Branch of the Department of Agriculture. The Department conducts comprehensive programs of research relating to forestry and the utilization of forest products, and carries out economic studies relating to forest resources and the forest industries. It provides information regarding forestry and the forest industries and promotes public interest in the proper management, protection and use of the forest resources. Financial assistance is offered to the provinces under agreements authorized by the Governor in Council in order to expedite progress in specific forestry programs. It carries out forest surveys and provides technical advice and assistance to other agencies of the Federal Government which are responsible for the administration of forest lands. The Department co-operates with international organizations concerned with forestry and in which Canada maintains membership, and the Minister of Forestry reports to Parliament for the Eastern Rockies Forest Conservation Board.

Department of Insurance.—The Minister of Finance is responsible for the Department of Insurance which originated in 1875 as a branch of the Department of Finance but was constituted a separate Department in 1910. It is authorized and governed by the Department of Insurance Act (RSC 1952, c. 70). Under the Superintendent of Insurance, the Department administers the statutes of Canada applicable to: insurance, trust and loan companies incorporated by the Parliament of Canada; provincially incorporated insurance companies registered with the Department; British and foreign insurance companies operating in Canada; small loans companies and money-lenders; co-operative credit societies registered under the Co-operative Credit Associations Act; and Civil Service insurance.

Under the relevant provincial statutes the Department examines provincial trust companies in the Provinces of Manitoba and New Brunswick and loan and trust companies in the Province of Nova Scotia.

International Joint Commission.—This Commission was established under a Great Britain–United States treaty, Jan. 11, 1909, ratified by Canada in 1911. The Commission, composed of six members (three appointed by the President of the United States and three by the Government of Canada) is governed by five specific Articles of the Boundary Waters Treaty of 1909. The Commission's approval is required for any use, obstruction or diversion of boundary waters affecting the natural level or flow of boundary waters in the other country; and for any works in waters flowing from boundary waters or below the boundary in rivers flowing across the boundary which raise the natural level of waters on the other side of the boundary.

Problems arising along the common frontier are also referred to the Commission by either country for examination and report, such report to contain appropriate conclusions and recommendations. In addition, questions or matters of difference between the two countries may be referred to the Commission for decision, provided both countries consent.

The Commission reports to the Secretary of State for External Affairs of Canada and to the Secretary of State of the United States.

Department of Justice.—This Department, established by SC 1868, c. 39, now operates under authority of the Department of Justice Act (RSC 1952, c. 71). It provides legal services to the Government and various government departments including preparing and settling government legislation, settling instruments issued under the Great Seal of Canada, regulating and conducting litigation for or against the Crown, superintending the acquisition of property and prosecutions under federal legislation other than the Criminal Code, administers federal statutes dealing with legal matters and provides administrative services for the Supreme Court of Canada and the Exchequer Court. The Department also superintends the penitentiaries and administers the prison system of Canada.

The Commissioner of the Royal Canadian Mounted Police operates under the direction of the Minister of Justice who also reports to Parliament for the National Parole Board.

Department of Labour.—The Department of Labour was established in 1900 by Act of Parliament (SC 1900, c. 24) and now operates under authority of the Department of Labour Act (RSC 1952, c. 72). The Department administers, under the Minister of Labour, legislation dealing with: industrial relations, investigation of disputes, etc.; fair employment practices; the regulation of fair wages and hours of labour; reinstatement in civil employment; female employee equal pay; government annuities; government employee compensation; merchant seamen compensation; technical and vocational training assistance; annual vacations with pay. It promotes joint consultation in industry through labour-management committees; provides co-ordination of services for rehabilitation of disabled civilians; organizes manpower utilization programs, e.g., farm labour; and operates a Women's Bureau. The Department publishes the *Labour Gazette* and other publications, as well as general information on labour-management, employment, manpower and related subjects.

The Canada Labour Relations Board acts on behalf of, and the National Technical and Vocational Training Advisory Council acts in an advisory capacity to the Minister of Labour, and the Merchant Seamen Compensation Board reports to the Minister of Labour. The Department is the official liaison agency between the Canadian Government and the International Labour Organization. The Unemployment Insurance Commission, which maintains the National Employment Service, reports to Parliament through the Minister of Labour.

Department of Mines and Technical Surveys.—This Department was created by an Act of Parliament (SC 1949, c. 17) which received Royal Assent on Dec. 10, 1949. Its establishment resulted from the reorganization of certain former departments. A primary function of the Department is to provide technological assistance in the development of Canada's mineral resources through investigations and research in the fields of geology, mineral dressing and metallurgy. The Department establishes the framework of surveys throughout the country that provides control for all surveying and mapping in Canada. It produces the base maps used in the development of Canada's natural resources, conducts all the charting of Canada's coastal and inland waters, and issues official sailing directions and Canadian sea and air navigation charts. The Department is under the Minister of Mines and Technical Surveys and is divided into five branches: the Surveys and Mapping Branch, the Geological Survey of Canada, the Mines Branch, the Dominion Observatories, and the Geographical Branch. The Mineral Resources Division, a unit of head office, gives its whole attention to matters concerned with the economics of mineral resources development.

In 1959 the Department became actively interested in oceanography and made two major moves toward setting its program into motion: (1) the establishment of the Polar Continental Shelf Project to carry out a long-term investigation of the continental shelf lying north and west of the Canadian Arctic Archipelago and of the waters above it, together with the islands of the Archipelago and the straits and sounds between the islands; and (2) the setting up of a $3,000,000 oceanographic institute in the Bedford Basin near Halifax which will have facilities for study in any phase of the science.

The Department administers the Explosives Act which regulates the manufacture, testing sale, storage and importation of explosives, and the Emergency Gold Mining Assistance Act which provides cost-aid to the Canadian gold mining industry.

Boards and Commissions are: Canadian Board on Geographical Names; Board of Examiners for Dominion Land Surveyors; the International Boundary Commission; and the Interprovincial Boundary Commissions.

Department of National Defence.—The Department of National Defence was established on Jan. 1, 1923 by the Department of National Defence Act, 1922, and was an amalgamation o the Department of Miltia and Defence, the Naval Service and the Air Board. The Department and the Canadian Forces (the Royal Canadian Navy, the Canadian Army and the Royal Canadian Air Force) now operate under the National Defence Act, 1950 (RSC 1952, c. 184).

In 1940 additional Ministers for Naval and Air Services were appointed and the Department was organized under a Minister of National Defence and two additional Ministers so that there was a Minister and staff for each of the Armed Services. Upon demobilization of the wartime Forces the appointment of Ministers of National Defence for Naval Services and Air Services ceased, and the Armed Forces were, in 1946, again administered by the Minister of National Defence without additional Ministers. Under the National Defence Act, the Canadian Forces are being administered solely by the Minister of National Defence and the Associate Minister o National Defence.

The Defence Research Board, created in 1947 to carry out research relating to national defence and to advise the Minister on all relevant matters of a scientific or technical nature, now function under the National Defence Act. The Chairman of the Board has a status equivalent to that o a Chief of Staff of one of the Canadian Forces.

National Energy Board.—This Board was established under the National Energy Board Act, 1959 for the broad purpose of assuring the best use of energy resources in Canada. The Board, composed of five members, is responsible for the regulation of the construction and operation of the oil and gas pipelines that are under the jurisdiction of the Parliament of Canada, the tolls charged for transmission by oil and gas pipelines, the export and import of gas and the export of electric power, and the construction of the lines over which such power is transmitted. The Board is also required to study and keep under review all matters relating to energy under the jurisdiction of the Parliament of Canada and to recommend such measures as it considers necessary and advisable on the subject. The Board reports to Parliament through the Minister of Trade and Commerce.

National Film Board.—The National Film Board, established in 1939, operates under the National Film Act (RSC 1952, c. 185) which provides for a Board of Governors of nine members—a Government Film Commissioner, appointed by the Governor in Council, who is Chairman of the Board, three members from the public service of Canada and five members from outside the public serice. The Board reports to Parliament through a designated Minister of the Crown (at present the Minister of Citizenship and Immigration). The Board is responsible for advising the Governor in Council on film activities and is authorized to produce and distribute films in the national interest and, in particular, films "designed to interpret Canada to Canadians and to other nations".

Department of National Health and Welfare.—This Department was established in October 1944 under authority of the Department of National Health and Welfare Act (RSC 1952, c. 74). It was originally formed as the Department of Health in 1919 and later became part of the Department of Pensions and National Health. This Department was replaced in 1944 by the Department of National Health and Welfare and the Department of Veterans Affairs.

The Department, headed by the Minister of National Health and Welfare, is composed of three branches — Administration, Health, and Welfare — and is administered by two Deputy Ministers.

The Department has charge of all matters relating to the promotion or preservation of the health, social security and social welfare of the people of Canada over which the Federal Parliament has jurisdiction. It administers the Acts listed in Section 3, p. 114, and is also responsible for: the administration of the National Health Program under which grants are made available to the provinces for the development and extension of health services; the federal aspects of emergency health and welfare services; the provision of health, medical and hospital services to Indians and Eskimos and to other elements of the population in the Yukon and Northwest Territories; the provision of assistance and consultative services to the provinces upon request on blindness control, child and maternal health, mental health, dental health, nursing, medical rehabilitation, nutrition and hospital design; the inspection and medical care of immigrants and seamen and the administration of marine hospitals; the supervision of public health facilities on railway, water and other forms of transportation; the enforcement of regulations of the International Joint Commission relating to public health; the promotion and conservation of the health of civil servants and other government employees; the collection, publication and distribution, subject to the provisions of the Statistics Act, of information relating to public health, improved sanitation and social and industrial conditions affecting the health of Canadians.

National Library.—The National Library came formally into existence on Jan. 1, 1953, with the proclamation of the National Library Act (RSC 1952, c. 330). It publishes *Canadiana*, a monthly catalogue of new publications relating to Canada, with an annual cumulation. The Library also publishes other bibliographies. Its Reference Division maintains the National Union Catalogue, which embodies the author catalogues of the major libraries in the ten provinces and is thus a key to the book collections of the whole country. Its book collection is growing steadily and at the end of 1960 consisted of about 250,000 volumes. The National Librarian reports to Parliament through the Minister of Citizenship and Immigration.

National Parole Board.—The establishment of the National Parole Board, which was formed in January 1959, is authorized by the Parole Act (SC 1958, c. 38) by which it is given absolute jurisdiction over all matters of parole. It is composed of a chairman and three members appointed by Order in Council for a ten-year period. The Board reports to Parliament through the Minister of Justice.

Department of National Revenue.—From Confederation until May 1918, customs and inland revenue Acts were administered by separate departments; after that date they were amalgamated under one Minister as the Department of Customs and Inland Revenue. In 1921 the name was changed to the Department of Customs and Excise. In April 1924 collection of income taxes was placed under the Minister of Customs and Excise and, under the Department of National Revenue Act, 1927, the Department became known as the Department of National Revenue.

The Customs and Excise Division of the Department is responsible for the assessment and collection of customs and excise duties as well as sales and excise taxes, by ports and outports. The Taxation Division is responsible for the assessment and collection of income taxes and estate taxes by 29 district offices throughout Canada.

The Minister of National Revenue is responsible to Parliament for the Tax Appeal Boar and also reports to Parliament for the Canadian Broadcasting Corporation and the Board c Broadcast Governors.

Department of Northern Affairs and National Resources.—The Department of Norther Affairs and National Resources was established in December 1953, superseding the Department c Resources and Development. In addition to Administration Services, which performs auxiliar functions, the Department is divided into six branches: the National Parks Branch administer the National Parks and National Historic Parks of Canada, National Historic Sites, and wildlif matters coming within the jurisidiction of the Federal Government; the Water Resources Branc is responsible for the investigation of water power resources, for the administration of federa assistance to the provinces under the Canada Water Conservation Assistance Act and for federa interest in certain joint federal-provincial construction projects; the Northern Administratio Branch is responsible for the administration of various federal Acts, territorial ordinances an regulations pertaining to the government of the Northwest Territories, for the conduct of certai business arising from the general administration of the Yukon Territory, for the administratio of natural resources in those Territories, and for Eskimo affairs, as well as for certain lands an mineral rights in the provinces vested in the Crown in the right of Canada; the Natural Histor Branch and Human History Branch of the National Museum of Canada are responsible for research publication of scientific studies, and public exhibitions in their respective fields of natural histor and human history; and the Canadian Government Travel Bureau promotes the tourist industr by encouraging travel to Canada.

The Minister of Northern Affairs and National Resources is also responsible to Parliamen for the Northern Canada Power Commission, and the National Battlefields Commission. Th Historic Sites and Monuments Board of Canada, an honorary body of recognized historians representing the various provinces, and the Advisory Committees on Wildlife Protection, Norther Development, and Water Use Policy act in an advisory capacity to the Minister in their respectiv fields. The Deputy Minister is Commissioner of the Northwest Territories and Chairman c the Northern Canada Power Commission and of each of the Advisory Committees.

Post Office Department.—Administration and operation of the Canada Post Office, by virtu of the Post Office Act (RSC 1952, c. 212) and under the Postmaster General, includes all phase of postal activity, personnel, mail handling, transportation of mails by land, water, rail and ai and the direction and control of financial services including the operation of money order an savings bank business.

Public Archives.—The Public Archives was founded in 1872 and is administered under th Public Archives Act (RSC 1952, c. 222) by the Dominion Archivist who has the rank of a Deput Minister and reports to Parliament through the Minister of Citizenship and Immigration. It purpose is to assemble and make available to the public a comprehensive collection of historica source material relating to the history of Canada. Major emphasis is placed on official record of the Government and the personal papers of political leaders and other prominent figures. Thes are supplemented by copies of many records in the British and French archives that relate t Canada, a fine map collection, a historical library, and many prints, paintings and photographs In 1956 the Archives opened a large Records Centre, designed to provide economical accommodatio for departmental records that are used relatively seldom. The building, equipped with ove 50 miles of shelving, also serves as a sorting centre in which papers of long-term interest are picke out of obsolete files, and useless material is segregated for destruction.

Under the terms of the Laurier House Act (RSC 1952, c. 163) the Public Archives is responsibl for the administration of Laurier House as a museum and study centre. The Dominion Archivis also administers the Government's Central Microfilm Unit, which is housed in the Record Centre.

Department of Public Printing and Stationery.—This Department was established i 1886.

The Department is responsible for supplying all requirements of printing and stationery t Parliament and departments of the Canadian Government; the cataloguing, distribution and sal of government publications; the publication of the *Canada Gazette*, and all departmental report papers, etc., required to be published by authority of the Governor General in Council (RS 1952, c. 226) and the publication of the Statutes of Canada (RSC 1952, c. 230).

The Department of Public Printing and Stationery is under the jurisdiction of the Secretar of State. The deputy-head is the Queen's Printer and Controller of Stationery.

Department of Public Works.—This Department was constituted in 1867 and operat under the legislative authority of the Public Works Act and other Acts of Parliament. It responsible for the management and direction of the public works of Canada and, except as spec fically provided in other Acts, attends to the construction and maintenance of public building wharves, piers, roads and bridges and the undertaking of dredging and navigable waters protectic work. The Department maintains district offices at key points across the country. The mai operating Branches of the Department with headquarters in Ottawa are: Harbours and Rivers Engineering, Building Construction, Development Engineering, Property and Building Management, and Purchasing and Stores. In addition, the Fire Prevention Branch, organized in 1919 and now a part of the Department of Public Works, maintains fire-loss records, makes inspections, reports on fire protection legislation and protection methods and endeavours to extend and co-ordinate fire prevention work in Canada. Federal interests in the Trans-Canada Highway are also handled by the Department.

The Minister of Public Works is responsible to Parliament for the Central Mortgage and Housing Corporation and for the National Capital Commission.

Royal Canadian Mounted Police.—The Royal Canadian Mounted Police, a civil force maintained by the Federal Government, was organized in 1873 as the North West Mounted Police. It now operates under the Royal Canadian Mounted Police Act, 1959 and is responsible for enforcing federal laws throughout Canada. By agreement with certain provincial governments, it is also responsible for enforcing provincial laws within those provinces and for policing many district municipalities, cities and towns. The Force is controlled and administered by the Minister of Justice.

Department of the Secretary of State.—The Secretary of State and Registrar General of Canada is the official medium of communication with the Throne through the Governor General, and is the custodian of the Great Seal of Canada and of the Privy Seal of the Governor General. He is responsible for the preparation and tabling of returns in Parliament. He administers legislation relating to patents of invention, trade marks, industrial designs, timber marking, copyright, companies, boards of trade, the registration of trade unions, public officers, public documents and governmental and parliamentary translations. He is also the Custodian of Enemy Property.

The Secretary of State has certain responsibilities with respect to civilian decorations, precedence and ceremonial. The Committee on the use of Parliament Hill and the National War Memorial falls within his purview. He is the Minister of the Department of Public Printing and Stationery and the spokesman in Cabinet and Parliament for the Civil Service Commission and the Chief Electoral Officer.

The Tariff Board.—Constituted in 1931 under the Tariff Board Act (SC 1931, c. 55), the Board derives its duties and powers from three statutes: the Tariff Board Act (RSC 1952, c. 261, as amended); the Customs Act (RSC 1952, c. 58, as amended); and the Excise Tax Act (RSC 1952, c. 100, as amended).

Under the Tariff Board Act, the Board makes inquiry into and reports upon any matter in relation to goods that, if brought into Canada, are subject to or exempt from duties of customs or excise taxes. Reports of the Board are tabled in Parliament by the Minister of Finance. It is also the duty of the Board to hold an inquiry under Sect. 14 of the Customs Tariff and to inquire into any other matter in relation to the trade and commerce of Canada that the Governor in Council sees fit to refer to the Board for inquiry and report.

Under the provisions of the Customs Act and the Excise Tax Act, the Tariff Board acts as a court to hear appeals from rulings of the Department of National Revenue, Customs and Excise, in respect of excise taxes, tariff classification, value for duty, and drawback of customs duties. Declarations of the Board on appeals on questions of fact are final and conclusive but the Acts contain provisions for appeal, on questions of law, to the Exchequer Court of Canada.

Department of Trade and Commerce.—The Department of Trade and Commerce was established by Act of Parliament on June 23, 1887, but did not function until Dec. 5, 1892, when an Order in Council to this effect was passed. Before the formation of the Department, assistance in the development of Canada's external trade was provided by eight Canadian Commercial Agents—five in the West Indies, two in Great Britain and one in France—who served on a part-time basis and were responsible to the Minister of Finance. In 1895 a Canadian Commercial Agent was appointed at Sydney, Australia, as the first full-time salaried Agent of the Department.

The framework of the present Trade Commissioner Service emerged during the next decade or so, the Commercial Agents gradually giving place to career Trade Commissioners. There are now 147 Trade Commissioners serving at Headquarters and abroad in 63 posts (including Assistant Trade Commissioners and agricultural, fisheries and timber specialists). Where a Trade Commissioner is a member of a mission maintained by the Department of External Affairs he holds diplomatic status and is known as a Minister (Commercial), Commercial Counsellor or Commercial Secretary.

The Department provides a wide range of services to Canadian businessmen through the Agriculture and Fisheries Branch, the Canadian Government Exhibition Commission, the Commodities Branch, the Economics Branch, the International Trade Relations Branch, the Trade Commissioner Service, the Trade Publicity Branch and the Domestic Commerce Service; the latter comprises the Depreciation Certification Branch, the Industrial Design Branch, the Industrial Development Branch, the Small Business Branch and the Standards Branch.

The following boards, commissions, Crown corporations and agencies report to Parliament through the Minister of Trade and Commerce: the Dominion Bureau of Statistics, the Export Credits Insurance Corporation, the National Energy Board, the Northern Ontario Pipe Line Crown Corporation, the Northern Transportation Company Limited, Eldorado Aviation Limited and Eldorado Mining and Refining Limited.

Department of Transport.—The Department was created on Nov. 2, 1936 from the former Departments of Marine and of Railways and Canals, and the Civil Aviation Branch of the Department of National Defence (RSC 1952, c. 79).

The work of the Department consists of three main Services—Marine, Air and Railways. Marine Service operations include aids to navigation, nautical and pilotage services, marine agencies, secondary canals, steamship inspection and floating equipment, and direct supervision over 300 public harbours; nine other harbours come under supervision of the Department but are administered by commissions. Air Services cover the operation of civil aviation, meteorological and telecommunication branches. The latter includes the administration and regulation of radar, radio marine and radio aeronautical aids to navigation and of communication by wire and by government telegraph and telephone.

Other services of the Department are in connection with the Government-owned companies: the Canadian National Railways, Canadian Government Railways, the Prince Edward Island, Newfoundland, and Yarmouth-Bar Harbor ferry services, and Trans-Canada Air Lines.

The Minister of Transport is responsible to Parliament for the following boards, commissions and Crown companies: the Air Transport Board, Board of Transport Commissioners, Canadian Maritime Commission, National Harbours Board, Park Steamship Company Limited, the St. Lawrence Seaway Authority, and the Canadian Overseas Telecommunication Corporation.

Department of Veterans Affairs.—This Department, established in 1944 (RSC 1952, c. 80), is concerned exclusively with the welfare of veterans and with the dependants of veterans and of those who died on active service. The Department provides treatment services (hospital, medical, dental and prosthetic), welfare services, education assistance, life insurance, and land settlement and home construction assistance. The Veterans' Bureau assists veterans in the preparation and presentation of pension claims.

The Canadian Pension Commission, established by the Pension Act (RSC 1952, c. 207), and the War Veterans Allowance Board, established by the War Veterans Allowance Act (RSC 1952, c. 340), also report to Parliament through the Minister of Veterans Affairs.

The Department has treatment institutions and facilities in a number of centres of population. It also maintains, in large cities across Canada, administrative offices, which are shared with the Canadian Pension Commission and the War Veterans Allowance Board, and an office in London, England.

Section 2.—Crown Corporations

The Crown corporation form of public enterprise is not a new type of organization in Canada but in recent years, as the work of government has become more complex, greater reliance has been placed on it as the appropriate instrument for administering and managing many public services in which business enterprise and public accountability must be combined.

The use of the corporate device to harmonize public responsibility in the development of economic resources and the provision of public services with the pursuit of commercial and industrial objectives has led to the adoption of many different forms and formulas of management. The most usual practice has been to set up a corporation under the provisions of a special Act of Parliament which defines its purposes and sets forth its powers and responsibilities. However, during World War II the Minister of Munitions and Supply was authorized to procure the incorporation of companies under the federal Companies Act, 1934, or under any provincial Companies Act to which he might delegate any of the powers conferred on him under the Department of Munitions and Supply Act or any Order in Council. Under this legislation about 28 companies were created to serve a wide variety of purposes; most of these companies have since been wound up.

Following the successful experience during the war years in relying on the Companies Act for the establishment of Crown companies, similar incorporating powers were granted by an amendment to the Research Council Act and have been incorporated in the Atomic Energy Control and the Defence Production Acts.

In 1946 the Government Companies Operation Act was passed to regulate the operation of companies formed under the Companies Act. However, it was applicable only to a relatively small number of companies and, in order to establish a more uniform system of financial and budgetary control and of accounting, auditing and reporting for Crown corporations generally, Part VIII of the Financial Administration Act was enacted in 1951 and brought into operation by proclamation on Oct. 1, 1952. Upon its enactment the financial provisions of the Government Companies Operation Act were repealed.

One of the more interesting features of the later legislation is the attempt that has been made to define and classify Crown corporations.* The Act defines a Crown corporation as a corporation that is ultimately accountable, through a Minister, to Parliament for the conduct of its affairs and establishes three classes of corporation: departmental, agency and proprietary.

Departmental Corporations.—A departmental corporation is defined as a Crown corporation that is a servant or agent of Her Majesty in right of Canada and is responsible for administrative, supervisory or regulatory services of a governmental nature. Ten departmental corporations are listed in Schedule B to the Act:—

Agricultural Stabilization Board (formerly Agricultural Prices Support Board)
Atomic Energy Control Board
Canadian Maritime Commission
Director of Soldier Settlement
The Director, The Veterans' Land Act
Dominion Coal Board
Fisheries Prices Support Board
National Gallery of Canada
National Research Council
Unemployment Insurance Commission.

Agency Corporations.—An agency corporation is defined as a Crown corporation that is an agent of Her Majesty in right of Canada and is responsible for the management of trading or service operations on a quasi-commercial basis or for the management of procurement, construction or disposal activities on behalf of Her Majesty in right of Canada. The following agency corporations are listed in Schedule C to the Financial Administration Act or have been subsequently added to that Schedule by the Governor in Council:—

Atomic Energy of Canada Limited
Canadian Arsenals Limited
Canadian Commercial Corporation
Canadian Patents and Development Limited
Crown Assets Disposal Corporation
Defence Construction (1951) Limited
National Battlefields Commission
Northern Canada Power Commission (formerly Northwest Territories Power Commission)
National Capital Commission (formerly Federal District Commission)
National Harbours Board
Park Steamship Company Limited.

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* Not all Crown corporations are subject to the provisions of the Financial Administration Act. For example, the Canadian Wheat Board, the Bank of Canada and its subsidiary the Industrial Development Bank, because of the special nature of their functions, are excluded from operations of the Crown corporations Part of the Act and are governed by their own Acts of incorporation, as are such joint enterprises of the federal and provincial governments as the Eastern Rockies Forest Conservation Board and the Halifax Relief Commission. Though not included in the Schedules to the Financial Administration Act, certain provisions of the Act apply to the Northern Ontario Pipe Line Crown Corporation, set up on June 7, 1956 to oversee the building of a cross-country natural gas pipeline. The Canada Council was set up under the Canada Council Act (assented to Mar. 28, 1957) as a Crown corporation but has been declared not an agency of the Crown and hence is not included in the Schedules to the Financial Administration Act.

Two corporations, Canadian Sugar Stabilization Corporation Limited and Commodity Prices Stabilization Corporation Limited, listed in Schedule C when the Financial Administration Act was proclaimed, have since discontinued operations and surrendered their charters. By an Order in Council of June 15, 1955, the name of the Northwest Territories Power Commission (now Northern Canada Power Commission) was deleted from Schedule D and added to Schedule C, effective Apr. 1, 1954.

Proprietary Corporations.—A proprietary corporation is defined as a Crown corporation that (1) is responsible for the management of lending or financial operations, or for the management of commercial or industrial operations involving the production of or dealing in goods and the supplying of services to the public, and (2) is ordinarily required to conduct its operations without Parliamentary appropriations. The following proprietary corporations are listed in Schedule D to the Act or have been subsequently added to that Schedule by the Governor in Council:—

Canadian Broadcasting Corporation
Canadian National (West Indies) Steamships Limited
Canadian Overseas Telecommunication Corporation
Central Mortgage and Housing Corporation
Eldorado Aviation Limited
Eldorado Mining and Refining Limited
Export Credits Insurance Corporation
Farm Credit Corporation (formerly Canadian Farm Loan Board)
National Railways, as defined in the Canadian National-Canadian Pacific Act, 1933
Northern Transportation Company Limited
Polymer Corporation Limited
The St. Lawrence Seaway Authority
Cornwall International Bridge Company Limited (subsidiary to the St. Lawrence Seaway Authority)
Trans-Canada Air Lines.

Departmental corporations are governed by the provisions of the Financial Administration Act that are applicable to departments generally. Agency and proprietary corporations, however, are subject to the provisions of the Crown corporations Part of the Act although, if there is any inconsistency between the provisions of that Part and those of any other Act applicable to a corporation, the Act provides that the latter prevail. There is provision in the Part for the control and regulation of such matters as corporation budgets and bank accounts, the turning over to the Receiver General of surplus money, limited loans for working-capital purposes, the awarding of contracts and the establishment of reserves, the keeping and auditing of accounts, and the preparation of financial statements and reports and their submission to Parliament through the appropriate Minister.

A further form of control is exercised by Parliament through the power to vote financial assistance. This may take different forms. For some corporations, capital may be provided by parliamentary grants, loans or advances that may subsequently be converted into capital stock or bonds; for others it may be by the issue of capital stock to be subscribed and paid for by the Government; or by the sale of bonds to either the Government or the public. A few corporations have financed all or a portion of their requirements from their own resources or earnings. Under a special financing arrangement, a 15-p.c. excise tax charged on radio and television sets and their parts and accessories, was allocated to the revenue of the Canadian Broadcasting Corporation, but this was discontinued under the provisions of the Broadcasting Act which came into force on Nov. 10, 1958, and since that time the Corporation has received federal financing solely by parliamentary grants.

Prior to 1952, Crown corporations did not pay corporate income taxes. However, the Income Tax Act was later amended so that, in respect of financial years commencing after Jan. 1, 1952, proprietary Crown corporations pay taxes on income earned in the same manner as any privately owned corporation. One desirable result of this amendment is that the financial statements of these Crown companies are now more comparable with those of private industry, with which in some instances they are in competition, and thus it is easier to assess the relative efficiency of their operations.

The functions of the various Crown corporations are given briefly in the following paragraphs. For a number of them, further details are included in the Chapters dealing with the subjects concerned (see Index).

Agricultural Stabilization Board.—The Board was established in 1958 (SC 1957-58, c. 22) to administer the provisions of the Agricultural Stabilization Act, which has replaced the Agricultural Prices Support Act. The Board reports to Parliament through the Minister of Agriculture.

Atomic Energy Control Board.—In December 1946, by Act of Parliament (RSC 1952, c. 11), the regulation and control of atomic energy in Canada was placed under the Atomic Energy Control Board. The Board reports to Parliament through the Chairman of the Committee of the Privy Council on Scientific and Industrial Research (at present the Minister of Veterans Affairs).

Atomic Energy of Canada Limited.—This Crown company was incorporated in February 1952 under the Atomic Energy Control Act, 1946 (RSC 1952, c. 11) to take over from the National Research Council on Apr. 1, 1952 the operation of the Chalk River project. The main activities of the company are (*a*) the development of economic nuclear power, (*b*) scientific research and development in the atomic energy field, (*c*) the operation of nuclear reactors and (*d*) the production of radioactive isotopes and associated equipments such as Cobalt-60 beam therapy units for the treatment of cancer. The company reports to Parliament through the Chairman of the Committee of the Privy Council on Scientific and Industrial Research (at present the Minister of Veterans Affairs).

Bank of Canada.—Legislation of 1934 (RSC 1952, c. 13) provided for the establishment of a central bank in Canada, the function of which is to regulate credit and currency, to control and protect the external value of the Canadian dollar and to stabilize the level of production, trade, prices and employment so far as may be possible within the scope of monetary action. The Bank acts as the fiscal agent of the Government of Canada, manages the public debt and has the sole right to issue notes for circulation in Canada. The Bank is managed by a Board of Directors appointed by the Government and composed of a Governor, a Deputy Governor and 12 Directors; the Deputy Minister of Finance is also a member of the Board. The Bank reports to Parliament through the Minister of Finance and is governed by its own Act of incorporation. (See footnote, p. 105.)

The Canada Council.—Established by Order in Council dated Apr. 15, 1957, this corporation of 21 members, a Director and an Associate Director operates under the terms of the Canada Council Act, assented to Mar. 28, 1957. The function of the Council is to encourage the arts, humanities and social sciences in Canada; its work is financed by a $50,000,000 University Capital Grants Fund and the earnings from a $50,000,000 Endowment Fund. In the making, managing and disposing of investments under the Act, the Council has the advice of an Investment Committee of five, including the Chairman and another member of the Council. The proceedings of the Council are reported each year to Parliament through the Prime Minister.

Canadian Arsenals Limited.—This company was established under the Companies Act by Letters Patent dated Sept. 20, 1945, and is subject to the Government Companies Operation Act (RSC 1952, c. 133) and certain provisions of the Financial Administration Act (RSC 1952, c. 116). The company was set up to take over and operate Crown-owned plant and equipment. Among the items it now manufactures are propellants and explosives, small arms, radar equipment, optical and electronic instruments, and a wide variety of ammunition and components. Its divisions, together with the location of their plants, are as follows: Dominion Arsenal Division (Quebec and Val Rose, Que.); Explosives Division (Valleyfield, Que.); Filling Division (St. Paul l'Ermite, Que.); Gun Ammunition Division (Lindsay, Ont.); Small Arms Division (Long Branch, Ont.); Instrument and Electronic Division (Scarborough, Ont.). The company is responsible to Parliament through the Minister of Defence Production.

Canadian Broadcasting Corporation.—The Broadcasting Act, 1958 continues the CBC as a Crown corporation for the purpose of operating a national broadcasting service. It has the authority to maintain and operate broadcasting stations and networks and to originate and secure programs from within and outside Canada. This national radio and television service is financed through annual grants from Parliament and revenues from commercial operations.

The Corporation consists of a board of 11 Directors appointed by the Governor in Council and chosen to give representation to the principal geographical divisions of the country. The Corporation reports to Parliament through a Minister of the Crown (at present the Minister of National

Revenue). The President and Vice President are full-time executives appointed for a period of seven years; the other nine Directors, including a Chairman and Vice Chairman are appointed for periods of three years and may serve two consecutive terms.

As the chief executive of the Corporation, the President, with the Vice President, is responsible to the Board of Directors for the conduct of its affairs. They administer the Corporation with four Staff Departments and three Operating Divisions. The Departments, headed by Vice Presidents are: Programs; Administration and Finance; Corporative Affairs and Engineering and Operations. The Divisions, headed by General Managers, are: Regional, French and English Network Broadcasting.

The Corporation's Head Office is situated in Ottawa with Headquarters for English Networks in Toronto, for French Networks in Montreal and with Regional Headquarters in St. John's for Newfoundland, Halifax for the Maritime Provinces, Winnipeg for the Prairie Provinces, and Vancouver for British Columbia. Headquarters for the Northern and Armed Forces Services are in Ottawa and for the International Service in Montreal.

Canadian Commercial Corporation.—This Corporation was established on May 1, 1946 by the Canadian Commercial Corporation Act (RSC 1952, c. 35). It purchases goods and commodities in Canada for the governments of other countries. It also acts as purchasing agent for international agencies such as the United Nations International Children's Emergency Fund and the United Nations Korean Reconstruction Agency. Other functions include arranging production and shipment of Canadian contributions of military stores to NATO countries. The Corporation also serves other departments of the Government of Canada. For instance, it arranges for the purchase and production of supplies and services which the External Aid Office is making available to other countries under the Colombo Plan. In carrying out its functions the Corporation works closely with the Department of Defence Production. It is responsible to Parliament through the Minister of Defence Production.

Canadian Maritime Commission.—The Commission was created in 1947 (RSC 1952, c. 38) to consider and recommend policies and measures necessary for the operation, maintenance, manning and development of a merchant marine and a ship-building and ship-repairing industry. The Commission is established as a separate Department of the Government of Canada but reports to Parliament through the Minister of Transport.

Canadian National Railways.—The Canadian National Railway Company was incorporated (SC 1919, c. 13) to operate and manage a national system of railways, including the Canadian Northern Railway System, the Canadian Government Railways and all lines entrusted to it by Order in Council. In 1923 the Grand Trunk Railway Company of Canada was amalgamated with the Canadian National Railway Company and since 1923 a number of railway lines acquired by the Government have been entrusted to the Company for operation and management, including the Newfoundland Railway and steamship services in 1949 and the Temiscouata Railway in 1950. The Canadian National Railways Act, 1919 was repealed in 1955 and the Canadian National Railways Act (SC 1955, c. 29) substituted therefor.

The Canadian National Railway Company is controlled by a Chairman and Board of Directors appointed by the Governor in Council, who report to Parliament through the Minister of Transport.

Canadian Overseas Telecommunication Corporation.—This Crown company was created on Dec. 10, 1949 by Act of Parliament (RSC 1952, c. 42) to acquire for public operation external telecommunication assets in Canada, in keeping with the Commonwealth Telegraph Agreement signed May 11, 1948. This Agreement was designed to bring about the consolidation and strengthening of the radio and cable communication systems of the Commonwealth. The Corporation is responsible to Parliament through the Minister of Transport.

Canadian Patents and Development Limited.—Canadian Patents and Development Limited is a Crown corporation established in 1948, pursuant to authority granted in an amendment to the Research Council Act which was passed in 1946. The primary purpose of the company is to make available to industry, through licensing arrangements, new processes developed by scientific workers of the National Research Council. Its services are equally available to other government departments, publicly supported institutions and universities. The company also has cross-agency arrangements with similar government agencies in other Commonwealth countries. The Board of Directors is composed of representatives from the National Research Council, from government departments and from industry and the universities. Any profits that the company may derive from licensing arrangements are available for further research and development. The Corporation reports to Parliament through the Chairman of the Committee of the Privy Council on Scientific and Industrial Research (at present the Minister of Veterans Affairs).

Canadian Wheat Board.—The Board was incorporated in 1935 under the Canadian Wheat Board Act to market, in an orderly manner, in the interprovincial and export trade, grain grown in Canada. Its powers include authority to buy, take delivery of, store, transfer, sell, ship or otherwise dispose of grain. Except as directed by the Governor in Council, the Board was not originally authorized to buy grain other than wheat but, since Aug. 1, 1949, it may also buy oats and barley if authorized to do so by Regulation approved by the Governor in Council. Only grain produced in the designated area, which includes Manitoba, Saskatchewan, Alberta and parts of British Columbia and Ontario, is purchased by the Board, which controls the delivery of grain into elevators and railway cars in that area as well as the interprovincial movement and export of wheat, oats and barley generally. The Board is governed by its own Act of incorporation (see footnote, p. 105). It reports to Parliament through the Minister of Agriculture.

Central Mortgage and Housing Corporation.—This Corporation was incorporated by Act of Parliament (RSC 1952, c. 46) in December 1945 to administer the National Housing Acts. Under the National Housing Act, 1954 (SC 1953–54 c. 23, as amended 1956 c. 9, 1957–58 c. 18, 1958 c. 3, 1959 c. 6, 1960 c. 10, and 1960–61 c. 1), the Corporation insures mortgage loans made by approved lenders for home ownership and rental housing; insures home improvement loans made by banks; makes direct loans to individual home-owners, to municipalities for construction of sewage treatment projects designed to eliminate pollution in water and soil and to universities for construction of student residences; undertakes jointly with provincial governments the assembly of land and construction of housing projects; provides financial assistance for studies to identify urban areas with blighted and substandard housing; assists municipalities in clearance and rehabilitation of substandard areas; conducts housing research; encourages community planning and owns and manages rental housing units built for war workers and veterans. The Corporation also arranges for and supervises construction of housing projects on behalf of the Department of National Defence and other government departments and agencies. The Corporation is responsible to Parliament through the Minister of Public Works.

Crown Assets Disposal Corporation.—This Corporation is established under the Surplus Crown Assets Act (RSC 1952, c. 260) and is subject to the Financial Administration Act (RSC 1952, c. 116). In June 1944, War Assets Corporation was established by statute to replace War Assets Corporation Limited which had been incorporated in 1943. In 1949 the name of War Assets Corporation was changed to Crown Assets Disposal Corporation. The Corporation's function is to dispose of surplus Crown assets. It is responsible to Parliament through the Minister of Defence Production.

Defence Construction (1951) Limited.—This company was established by Letters Patent in 1951 to take over the general undertakings of Defence Construction Limited. The company carries out major defence construction projects with the exception of houses and airfield runways and is responsible to Parliament through the Minister of Defence Production.

Director of Soldier Settlement and Director of the Veterans' Land Act.—The Director of Soldier Settlement (under the Act of 1919) is also the Director of the Veterans' Land Act, and in each capacity is legally a corporation sole. For administrative purposes, however, the programs carried on under both Acts constitute integral parts of the services provided by the Department of Veterans Affairs.

Dominion Coal Board.—The Board, established as a department in 1947 by the Dominion Coal Board Act (RSC 1952, c. 86), has the responsibility of studying and recommending to the Government policies concerning the production, import, distribution and use of coal. The chairman has the status of a deputy minister and the Board reports to Parliament through the Minister of Mines and Technical Surveys. The Board administers transportation and other subventions relating to coal, including those under the Atlantic Provinces Power Development Act (SC 1957–58, c. 25). It also administers loans authorized under the Coal Production Assistance Act (RSC 1952, c. 173, as amended by SC 1959, c. 39). The Dominion Coal Board Act makes provision for the regulation and control of the production, distribution and use of fuel in times of national emergency.

Eastern Rockies Forest Conservation Board.—The Board was appointed in 1947 under the Eastern Rocky Mountain Forest Conservation Act which authorized an agreement between the Government of Canada and the Province of Alberta relating to the protection and conservation of the forests of that portion of the eastern slope of the Rocky Mountains which gives rise to the major tributaries of the Saskatchewan River. The function of the Board is to determine the policy necessary to obtain the greatest possible flow of water in the Saskatchewan River system. The planning of programs of forest use and conservation is a joint duty of the Board and the Provincial Forest Service. The administration of the conservation area is a function of the province.

Funds for capital expenditures during the first seven years of the agreement were provided by the Federal Government with maintenance expenditures being paid by the Province of Alberta. In 1955 the province undertook the responsibility of financing both capital improvements and maintenance work. Currently one member of the three-man Board is appointed by the Federal Government and the province has the right to appoint two members. The choice of one of the three members as Board chairman is vested in the province. The Board reports to Parliament through the Minister of Forestry.

Eldorado Aviation Limited.—This company was incorporated Apr. 23, 1953 to carry air traffic, both passenger and freight, for Eldorado Mining and Refining Limited and its wholly owned subsidiary, Northern Transportation Company Limited. It reports to Parliament through the Minister of Trade and Commerce.

Eldorado Mining and Refining Limited.—Set up in 1944 under the name of Eldorado Minin and Refining (1944) Limited (the date was omitted from the name in June 1952), the company business is the mining and refining of uranium and the production of nuclear fuels in Canada. Th company has also entered into contracts for the purchase of uranium concentrates from privat producers in Canada. It reports to Parliament through the Minister of Trade and Commerce.

Export Credits Insurance Corporation.—This Corporation commenced operations in 194 under the Export Credits Insurance Act, 1944 (RSC 1952, c. 105) and is administered by a Boar of Directors (including the Deputy Minister of Trade and Commerce and the Deputy Minister Finance) with the advice of an Advisory Council. Its function is to insure Canadian exporter against non-payment by foreign buyers arising out of credit and political risks involved in foreig trade. The Corporation reports to Parliament through the Minister of Trade and Commerce.

Farm Credit Corporation.—This Corporation was established on Oct. 5, 1959 (SC 195 c. 43) for the purpose of providing for the extension of long-term mortgage credit to farmers. Th Corporation is responsible to Parliament through the Minister of Agriculture.

Fisheries Prices Support Board.—The Board was set up in July 1947 (RSC 1952, c. 120) t recommend to the Government price support measures when severe price declines occur. Th Board functions under the direction of the Minister of Fisheries and consists of a chairman, wh is a senior officer of the Department of Fisheries, and five members chosen from private and c operative firms in the industry. The Board has authority to buy fishery products and to se or otherwise dispose of them or to pay producers the difference between a price prescribed by th Board and the average price the product actually commands.

Industrial Development Bank.—The Bank, a subsidiary of the Bank of Canada, was inco porated in 1944 to provide loans to industrial enterprises where financing is not available throug recognized lending organizations. (See footnote, p. 105.)

National Battlefields Commission.—This Commission was established by Act of Parliamen in 1908 to preserve the historic battlefields at Quebec City. The Commission is composed of nin members, seven being appointed by the Federal Government and one each by the Provinces Ontario and Quebec. The Commission is supported by an annual statutory grant from the Federa Government and is responsible to Parliament through the Minister of Northern Affairs an National Resources.

National Capital Commission.—This Commission is a Crown agency created by the Nationa Capital Act (SC 1958, c. 37), proclaimed Feb. 6, 1959. It is the lineal descendant of the Federa District Commission.

The Commission is served by a full-time paid chairman and comprises a total of twent members representative of the ten provinces of Canada. There is a staff of seven officials reportin to a general manager, and a permanent work force of about 550.

Co-ordination and development of public lands in the National Capital Region are undertake by direct planning and construction by the Commission's staff; by co-operation with munic palities; by provision of planning aid or financial assistance in municipal projects; and by advisin the Department of Public Works on the siting and appearance of all Federal Government building in the 1,800-sq. mile National Capital Region. The Commission reports to Parliament throug the Minister of Public Works.

National Gallery of Canada.—The National Gallery of Canada was founded in 1880. B Act of Parliament in 1913, re-enacted in 1951, it was placed under the management of a Boar of Trustees appointed by the Governor General in Council and now operates under the Nation Gallery Act (RSC 1952, c. 186). It is responsible to Parliament through a Minister of the Crow (at present the Minister of Citizenship and Immigration).

The first charge of the National Gallery is the development and care of the national art colle tions. Other important services are the arrangement of loans and exhibitions from abroad an from its own holdings for showing in Canada and abroad, and general extension work consisting the distribution of reproductions for educational purposes, lectures, educational tours, publication school broadcasts and art films.

National Harbours Board.—The Board was established by Act of Parliament in 1936. It responsible for the administration of port facilities at Halifax, Saint John, Chicoutimi, Quebe Trois Rivières, Montreal, Vancouver and Churchill, the Jacques Cartier and Champlain bridg at Montreal Harbour, and the government grain elevators at Prescott and Port Colborne, On The Board is responsible to Parliament through the Minister of Transport.

National Research Council.—In 1917 the Research Council Act was passed and in 19 laboratories for scientific research were established at Ottawa. The National Research Counc now has Divisions of Pure and Applied Chemistry, Building Research, Mechanical Engineerin the National Aeronautical Establishment, Radio and Electrical Engineering, Pure and Applied Physics and Applied Biology. Regional laboratories have been established at Saskatoon, Sask., and Halifax, N.S.

A Medical Research Council fully responsible for policy in the field of medical research, but functioning under the general administration of the National Research Council, was established in November 1960.

Patentable processes and improvements developed by the Council are made available under licence to industry through a Crown company, Canadian Patents and Development Limited, and any profits from the licensing arrangements are used for further research and development.

The National Research Council reports to Parliament through the Chairman of the Committee of the Privy Council on Scientific and Industrial Research.

Northern Canada Power Commission.—The Commission was established by Act of Parliament in 1948 to provide electric power to points in the Northwest Territories where a need developed and where power could be supplied on a self-sustaining basis; the Act was amended in 1950 to give authority to the Commission to provide similar services in Yukon Territory. The name of the Commission, formerly Northwest Territories Power Commission, was changed in 1956. The Commission is composed of a chairman and two members appointed by the Governor in Council. The Commission operates four hydro-electric plants, two of which are located in the Northwest Territories on the Snare River near Yellowknife, and two in the Yukon Territory on the Yukon River at Whitehorse and on the Mayo River near Mayo, and diesel electric plants at Forth Smith, Fort Simpson, Fort Resolution, Frobisher Bay, N.W.T., and Field, B.C., and a diesel power and central heating plant and water supply and sewerage systems at Inuvik, N.W.T.; the Commission also operates, on behalf of the Department of Northern Affairs and National Resources, a small diesel electric and heating plant at Fort McPherson, N.W.T., and a central heating plant and domestic water supply system at Fort Simpson, N.W.T.

The Minister of Northern Affairs and National Resources reports to Parliament for the Commission.

Northern Ontario Pipe Line Crown Corporation.—This Corporation was established by the Northern Ontario Pipe Line Crown Corporation Act (SC 1956, c. 10) for the purpose of constructing the northern Ontario section of the all-Canadian natural gas pipeline and of leasing, with an option to purchase, this section to Trans-Canada Pipe Lines Limited. In addition, the Corporation was authorized to make short-term loans to Trans-Canada Pipe Lines Limited for the construction of the western section of the pipeline. The Corporation is responsible to Parliament through the Minister of Trade and Commerce.

Pipeline installation on the northern Ontario section, which extends from the Manitoba-Ontario border to the vicinity of Kapuskasing, Ont., was completed on Oct. 22, 1958.

Northern Transportation Company Limited.—This Company was incorporated in 1947 under the title of Northern Transportation Company (1947) Limited, the date being omitted from the name in 1952. Previously a company chartered under an Alberta statute, it has been a wholly owned subsidiary of Eldorado Mining and Refining Limited since that Crown company was established and carries out the business of a common carrier in the Mackenzie River watershed. The Company is responsible to Parliament through the Minister of Trade and Commerce.

Park Steamship Company Limited.—After World War II this Company acted as an agent for Crown Assets Disposal Corporation in the sale and delivery to purchasers of Government war-built ships. This work is completed but the Company remains available to carry out any appropriate duties. It has no staff of its own, any necessary work being done by the staff of the Canadian Maritime Commission (see p. 108). The Company reports to Parliament through the Minister of Transport.

Polymer Corporation Limited.—This Corporation was established in 1942 by Letters Patent under the Companies Act and is subject to the Government Companies Operation Act (RSC 1952, c. 133) and the Financial Administration Act (RSC 1952, c. 116). It was set up to construct and operate a synthetic rubber plant which now produces a variety of synthetic rubber products and some chemicals. The plant is located at Sarnia, Ont. The Corporation is responsible to Parliament through the Minister of Defence Production.

St. Lawrence Seaway Authority.—The St. Lawrence Seaway Authority was established by Act of Parliament in 1951 (RSC 1952, c. 242) and came into force by proclamation on July 1, 1954. The Authority was incorporated for the purposes of constructing, maintaining and operating all such works as may be necessary to provide and maintain, either wholly in Canada or in conjunction with works undertaken by an appropriate authority in the United States, a deep waterway between the Port of Montreal and Lake Erie. The Authority is composed of a President, a Vice President and a Member and reports to Parliament through the Minister of Transport.

Trans-Canada Air Lines.—TCA came into being by Act of Parliament in 1937 (RSC 1952, c. 268) to provide for the development of a publicly owned scheduled transcontinental air service. Transatlantic air services were inaugurated by TCA on behalf of the Canadian Government during World War II and scheduled operations were commenced at the end of the War. TCA now maintains passenger, mail and commodity traffic services over nationwide routes and also services to the United States, England, Scotland, Ireland, France, Belgium, Switzerland, West Germany, Austria, Bermuda, the Bahamas, Jamaica, Antigua, Barbados and Trinidad. TCA is responsible to Parliament through the Minister of Transport.

Unemployment Insurance Commission.—The Commission was appointed on Sept. 24, 1940 under the provisions of the Unemployment Insurance Act, 1940 (RSC 1952, c. 273) for the purpose of administering the Act and providing a National Employment Service. It is composed of three Commissioners appointed by the Governor in Council, of whom one is designated Chief Commissioner. One Commissioner, other than the Chief Commissioner, is appointed after consultation with organizations representative of workers and the other after consultation with organizations representative of employers. The Chief Commissioner is appointed to hold office for a period of ten years and each of the other Commissioners to hold office for a period not exceeding ten years. The Commission is responsible to Parliament through the Minister of Labour.

Section 3.—Acts Administered by Federal Departments*

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada

NOTE.—*Copies of individual Acts of Parliament and amendments may be obtained from the Queen's Printer, Ottawa, at prices of from 10 cents to $1.50 per copy according to number of pages. Where duplications of certain Acts appear in the list, parts of these Acts are administered under the Departments given.*

Department, Year and Chapter of Statute	Name of Act
Agriculture—	
RSC 1952 4	Agricultural Products Board
5	Agricultural Products Co-operative Marketing
6	Agricultural Products Marketing
9	Animal Contagious Diseases
22, 305	Canada Dairy Products
44	Canadian Wheat Board
47	Cheese and Cheese Factory Improvement
52, 313	Cold Storage
66	Department of Agriculture
81	Destructive Insect and Pest
101	Experimental Farm Stations
113	Feeding Stuffs
115	Fertilizers
126	Fruit, Vegetables and Honey
141	Hay and Straw Inspection
155	Inspection and Sale
167	Live Stock and Live Stock Products
168	Live Stock Pedigree
172	Maple Products Industry
175	Maritime Marshland Rehabilitation
177	Meat and Canned Foods
180	Milk Test
209	Pest Control Products
213	Prairie Farm Assistance
214	Prairie Farm Rehabilitation
248	Seeds
294	Wheat Co-operative Marketing
1953-54 51	Criminal Code, Sect. 178, Race Track Betting
1955 27	Canada Agricultural Products Standards
36	Meat Inspection
1957-58 22	Agricultural Stabilization
1959 43	Farm Credit
Auditor General—	
RSC 1952 116	Financial Administration
Citizenship and Immigration—	
1924 48	Indian Reserve Lands in Ontario
1927 37	St. Regis Indian Reservation
1934 29	Caughnawaga Indian Reserve
1943 19	British Columbia Indian Reserves Mineral Resources
RSC 1952 33	Canadian Citizenship
67	Department of Citizenship and Immigration
146	Immigration Aid Societies
149	Indian
325	Immigration
Civil Service Commission—	
RSC 1952 48	Civil Service
Defence Production—	
RSC 1952 35	Canadian Commercial Corporation
62	Defence Production
260	Surplus Crown Assets
External Affairs—	
1911 28	Respecting the International Boundary Waters Treaty and the existence of the International Joint Commission (amended 1914, c. 5, and 1922, c. 43)
1948 71	Carrying into effect the Treaties of Peace between Canada and Italy, Romania, Hungary and Finland
RSC 1952 50	Carrying into effect the Treaty of Peace between Canada and Japan
68	Department of External Affairs
122	Food and Agriculture Organization of the United Nations

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* Compiled from information supplied by the respective Departments.

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—continued

Department, Year and Chapter of Statute			Name of Act
External Affairs—concluded			
RSC	1952	142	High Commissioner of the United Kingdom
		218	Privileges and Immunities (NATO)
		219	Privileges and Immunities (United Nations)
		275	United Nations
	1953-54	54	Diplomatic Immunities (Commonwealth Countries)
Finance—			
			Appropriation (Annual)
			Canadian National Railways Financing and Guarantee (Annual)
RSC	1952	12	Bank
		13	Bank of Canada
		15	Bills of Exchange
		19	Bretton Woods Agreements
		82	Diplomatic Service (Special) Superannuation
		110	Farm Improvement Loans
		116	Financial Administration
		131	Gold Export
		151, 326	Industrial Development Bank
		156	Interest
		182	Municipal Grants
		183	Municipal Improvements Assistance
		204	Pawnbrokers
		221	Provincial Subsidies
		232	Quebec Savings Banks
		245	Satisfied Securities
		261, 336	Tariff Board
		278	Veterans Business and Professional Loans
		296	Winding-up
		315	Currency, Mint and Exchange Fund
	1952-53	47	Public Service Superannuation
	1953-54	28	Fire Losses Replacement Account
	1955	31	Canadian National Railways Refunding
		46	Fisheries Improvement Loans
	1956	1	Prairie Grain Producers Interim Financing
		2	Temporary Wheat Reserves
		29	Federal-Provincial Tax Sharing Arrangements
	1957-58	26	Beechwood Power Project
	1959	32	Public Service Pension Adjustment
	1960	1	Prairie Grain Loans
		32	International Development Association
	1960-61	5	Small Business Loans
Fisheries—			
RSC	1952	61	Deep Sea Fisheries
		69	Department of Fisheries
		118	Fish Inspection
		119	Fisheries
		120	Fisheries Prices Support
		121	Fisheries Research Board
		177	Meat and Canned Foods
		194	Northern Pacific Halibut Fishery (Convention)
		244	Salt Fish Board
		293	Whaling Convention
	1952-53	15	Coastal Fisheries Protection
		44	North Pacific Fisheries Convention
	1953-54	18	Northwest Atlantic Fisheries Convention
Fisheries—concluded			
	1955	34	Great Lakes Fisheries Convention
	1957	11	Pacific Salmon Fisheries Convention
		31	The Pacific Fur Seals Convention
Forestry—			
	1947	59	Eastern Rocky Mountains Forest Conservation
RSC	1952	24	Department of Forestry
Insurance—			
RSC	1952	31	Canadian and British Insurance Companies
		49	Civil Service Insurance
		70	Department of Insurance
		100	Excise Tax (Part I)
		125	Foreign Insurance Companies
		170	Loan Companies
		251	Small Loans
		272	Trust Companies
		296	Winding-up (Part III)
	1952-53	28	Co-operative Credit Associations
Justice—			
	1940	43	Treachery
RSC	1952	1	Admiralty
		14	Bankruptcy
		28	Canada Prize
		71	Department of Justice
		98	Exchequer Court
		106	Expropriation
		111	Farmers' Creditors Arrangement
		116	Financial Administration
		127	Fugitive Offenders
		144	Identification of Criminals
		154	Inquiries
		158	Interpretation
		159	Judges
		160	Juvenile Delinquents
		171	Lord's Day
		198	Official Secrets
		206	Penitentiary
		210	Petition of Right
		217, 333	Prisons and Reformatories
		234	Railway
		253	Solicitor General
		266	Tobacco Restraint
		259, 335	Supreme Court
		299	Yukon Administration of Justice
		307	Canada Evidence
		314	Combines Investigation
		322	Extradition
	1952-53	530	Crown Liability
	1953-54	51	Criminal Code
	1958	38	Parole
	1959	34	Royal Canadian Mounted Police Superannuation
		54	Royal Canadian Mounted Police
	1960	44	Canadian Bill of Rights
Labour—			
RSC	1927	110	Conciliation and Labour
RSC	1952	72	Department of Labour
		108	Fair Wages and Hours of Labour
		132	Government Annuities
		134 323	Government Employees Compensation
		152	Industrial Relations and Disputes Investigation
		178	Merchant Seamen Compensation
		236	Reinstatement in Civil Employment

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—continued

Department, Year and Chapter of Statute			Name of Act
Labour—concluded			
RSC	1952	295	White Phosphorous Matches
	1952-53	19	Canada Fair Employment Practices
	1955	50	Unemployment Insurance
	1956	38	Female Employees Equal Pay
	1957-58	24	Annual Vacations
	1960-61	6	Technical and Vocational Training Assistance
Mines and Technical Surveys—			
	1951	26	Canada Lands Survey
RSC	1952	73	Department of Mines and Technical Surveys
		95, 318	Emergency Gold Mining Assistance
		102	Explosives
National Defence—			
RSC	1952	63	Defence Services Pension
		184	National Defence
		283	Visiting Forces (British Commonwealth)
		284	Visiting Forces (North Atlantic Treaty)
	1959	21	Canadian Forces Superannuation
National Health and Welfare—			
RSC	1952	74	Department of National Health and Welfare
National Health—			
RSC	1952	29	Canada Shipping (Part V, Sick Mariners and Marine Hospitals)
		165	Leprosy
		201	Opium and Narcotic Drug
		220	Proprietary or Patent Medicine
		229	Public Works Health
		231	Quarantine
	1952-53	38	Food and Drugs
	1957	28	Hospital Insurance and Diagnostic Services
Welfare—			
RSC	1952	17	Blind Persons
		109	Family Allowances
		199	Old Age Assistance
		200	Old Age Security
	1953-54	55	Disabled Persons
	1956	26	Unemployment Assistance
National Library—			
RSC	1952	330	National Library
National Revenue—			
Taxation—			
	1940	32	Excess Profits Tax
	1940-41	15	
	1942-43	26	
	1943-44	13	
	1944-45	38	
	1945	19	
	1946	47	
	1947	32	
National Revenue—concluded			
Taxation—concl.			
	1943-44	21	Canada-U.S. Tax Convention (Income Tax)
	1950	27	
	1951	5	
	1956	35	
	1944-45	31	Canada-U.S. Tax Convention (Succession Duties)
	1950	27	
	1946	38	Canada-U.K. Income Tax Agreement
		39	Canada-U.K. Succession Duty Agreement
	1948	34	Canada-N.Z. Income Tax Agreement
	1950-51	40	Canada-France Income Tax Convention
	1952	18	
	1950-51	41	Canada-France Succession Duty Convention
		42	Canada-Sweden Income Tax Agreement
RSC	1952	89	Dominion Succession Duty
		317	
	1956-57	22	
	1958	29	Estate Tax
	1960	29	
RSC	1952	148	Income Tax
	1952-53	40	
	1953-54	57	
	1955	54	
		55	
	1956	39	
	1957	29	
	1957-58	17	
	1958	32	
	1959	45	
	1960	43	
	1955	10	Canada - Ireland Income Tax Agreement
		11	Canada - Ireland Succession Duties Agreement
	1956	5	Canada - Denmark Income Tax Agreement
		33	Canada - Germany Income Tax Agreement
	1956-57	17	Canada - South Africa Death Duties Agreement
		18	Canada - South Africa Income Tax Agreement
	1957	16	Canada-Netherlands Income Tax Agreement (amended 1960, c. 18)
	1957-58	27	Canada - Australia Income Tax Agreement
	1958	12	Canada-Belgian Congo Income Tax Agreement
		13	Canada - Belgium Income Tax Agreement
	1959	20	Canada - Finland Income Tax Agreement
Customs and Excise—			
RSC	1952	58	Customs
		60	Customs Tariff (amended by 316)
		75	Department of National Revenue
		99	Excise (amended by 319)
		100	Excise Tax (amended by 320)
Administered in Part—			
	1925	54	United States Treaty (smuggling)
RSC	1952	2	Aeronautics (amended by 302)
		11	Animal Contagious Diseases

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—continued

Department, Year and Chapter of Statute	Name of Act
National Revenue—concluded *Administered in Part*—concluded	
RSC 1952 11	Atomic Energy Control
22	Canada Dairy Products (amended by 305)
29	Canada Shipping
30	Canada Temperance
44	Canadian Wheat Board
55	Copyright
59	Customs and Fisheries Protection
81	Destructive Insect and Pest
102	Explosives
103	Export
113	Feeding Stuffs
114	Ferries
115	Fertilizers
118	Fish Inspection
119	Fisheries
123	Food and Drugs
126	Fruit, Vegetables and Honey
128	Game Export
131	Gold Export
135	Government Harbours and Piers
145	Immigration (amended by 325)
147	Importation of Intoxicating Liquors
155	Inspection and Sale
167	Live Stock and Live Stock Products
168	Live Stock Pedigree
169	Live Stock Shipping
172	Maple Products Industry
177	Meat and Canned Foods
187	National Harbours Board
193	Navigable Waters Protection
194	Northern Pacific Halibut Fishery (Convention)
201	Opium and Narcotic Drug
205	Pelagic Sealing (Provisional Agreement)
209	Pest Control Products
212	Post Office
215	Precious Metals Marking
220	Proprietary or Patent Medicine
231	Quarantine
233	Radio
248	Seeds
271	Transport
292	Weights and Measures
295	White Phosphorous Matches
1952-53 15	Coastal Fisheries Protection
1953-54 27	Export and Import Permits
51	Criminal Code
1955 27	Canada Agricultural Products Standards
36	Meat Inspection
Northern Affairs and National Resources—	
1908 57, 58	National Battlefields at Quebec
1927 51	Respecting certain debts due the Crown
RSC 1927 87	Seed Grain
88	Seed Grain Sureties
116	Railway Belt
124	Manitoba Supplementary Provisions
180	Saskatchewan and Alberta Roads
211	Railway Belt Water

Department, Year and Chapter of Statute	Name of Act
Northern Affairs and National Resources—concl.	
1928 32	Lac Seul Conservation
1930 3	Alberta Natural Resources
29	Manitoba Natural Resources
37	Railway Belt and Peace River Block
41	Saskatchewan Natural Resources
1932 35	Refunds (Natural Resources)
55	Waterton - Glacier International Peace Park
1939 33	Rainy Lake Watershed Emergency Control
RSC 1952 90	Dominion Water Power
128	Game Export
162	Land Titles
179	Migratory Birds Convention
189	National Parks
192	National Wildlife Week
196	Northern Canada Power Commission
224	Public Lands Grants
263	Territorial Lands
300	Yukon Placer Mining
301	Yukon Quartz Mining
331	Northwest Territories
1952-53 21	Canada Water Conservation Assistance
39	Historic Sites and Monuments
53	Yukon
1953-54 4	Department of Northern Affairs and National Resources
1955 47	International River Improvements
1957-58 25	Atlantic Provinces Power Development
Post Office—	
RSC 1952 212	Post Office
Public Archives—	
RSC 1952 163	Laurier House
222	Public Archives
Public Printing and Stationery—	
RSC 1952 226	Public Printing and Stationery
230	Publication of Statutes
Public Works—	
RSC 1952 91	Dry Docks Subsidies
106	Expropriation
114	Ferries
138	Government Works Tolls
193	Navigable Waters Protection, Part I
216	Prime Minister's Residence
228	Public Works
269	Trans-Canada Highway
324	Government Property Traffic
Secretary of State—	
RSC 1929 55	Reparation Payment
1947 24	Trading with the Enemy (Transitional Powers)
1948 71	Italy, Romania, Hungary and Finland Treaties of Peace
RSC 1952 18	Boards of Trade
23, 306	Canada Elections
30	Canada Temperance

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—continued

Department, Year and Chapter of Statute	Name of Act
Secretary of State—concluded	
RSC 1952 53	Companies
54	Companies Creditors Arrangement
55	Copyright
62	Defence Production
77	Department of State
83	Disfranchising
87	Dominion Controverted Elections
149	Indian
195	Northwest Territories
203	Patent
208	Pension Fund Societies
223	Public Documents
225	Public Officers
234	Railway
235	Regulations
247	Seals
263	Territorial Lands
265	Timber Marking
267	Trade Unions
270	Translation Bureau
295	White Phosphorous Matches
298	Yukon
307	Canada Evidence
1952-53 49	Trade Marks and Unfair Competition
Trade and Commerce—	
RSC 1952 11	Atomic Energy Control
78	Department of Trade and Commerce
92	Electrical and Photometric Units
94	Electricity Inspection
103	Export
105	Export Credits Insurance
129	Gas Inspection
153	Inland Water Freight Rates
164	Length and Mass Units
191	National Trade Mark and True Labelling
215	Precious Metals Marking
257	Statistics
292	Weights and Measures
1953-54 27	Export and Import Permits
1955 14	Exportation of Power and Fluids and Importation of Gas
1956 10	Northern Ontario Pipe Line Crown Corporation
1959 46	National Energy Board
Transport—	
	Auditors for National Railways (Annual)
	Canadian National Railways Financing and Guarantee (Annual)
1907 22	Intercolonial Railway and Prince Edward Island Railway Employees Provident Fund
1911 26	Toronto Harbour Commissioners
1912 55	Winnipeg and St. Boniface Harbour Commissioners
98	Hamilton Harbour Commissioners
1913 158	New Westminster Harbour Commissioners
162	North Fraser Harbour Commissioners
1927 29	Canadian National (West Indies) Steamship Company
RSC 1927 211	Railway Belt Water
1929 4	Canadian National Railways Pensions
Transport—concl.	
11	Canadian National Refunding
12	Canadian National Montreal Terminals
48	Northern Alberta Railways
1931 19, 20	Beauharnois Light, Heat and Power
40	New Westminster Harbour Loan
1940 20	Beauharnois Light, Heat and Power
1947 26	Beauharnois Light, Heat and Power
42	Port Alberni Harbour Commissioners
1948 10	New Westminster Harbour Commissioners Refunding
RSC 1952 2, 302	Aeronautics
16	Bills of Lading
20	Bridges
29	Canada Shipping
34	Belleville Harbour Commissioners
38	Canadian Maritime Commission
39	Canadian National — Canadian Pacific
42	Canadian Overseas Telecommunication Corporation
45	Carriage by Air
79	Department of Transport
135	Government Harbours and Piers
136	Government Railways
137	Government Vessels Discipline
157	International Rapids Power Development
168	Live Stock Shipping
174	Maritime Freight Rates
187	National Harbours Board
193	Navigable Waters Protection
202	Passenger Tickets
211	Pipe Lines
233	Radio
234	Railway
242	St. Lawrence Seaway Authority
262	Telegraphs
268	Trans-Canada Air Lines
271	Transport (Board of Transport Commissioners)
276	United States Wreckers
291	Water Carriage of Goods
311	Canadian National Railways Capital Revision
1955 15	Foreign Aircraft Third Party Damage
29	Canadian National Railways
31	Canadian National Refunding
1957 38	Windsor Harbour Commissioners
1958 34	Lakehead Harbour Commissioners
1960 19	Nanaimo Harbour Commissioners
21	Oshawa Harbour Commissioners
26	Canadian National Toronto Terminals
Veterans Affairs—	
1920 54	Returned Soldiers' Insurance (as amended)
RSC 1927 188	Soldier Settlement (as amended)
RSC 1952 8	Allied Veterans Benefits
51, 312	Civilian War Pensions and Allowances
80	Department of Veterans Affairs
117	Fire Fighters War Service Benefits
207, 332	Pension (amended 1953-54, c. 62; 1957-58, c. 19) (Canadian Pension Commission)

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—concluded

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
Veterans Affairs —continued		**Veterans Affairs** —concluded	
RSC 1952 256	Special Operators War Service Benefits	297	Women's Royal Naval Services and the South African Military Nursing Service (Benefits)
258	Supervisors War Service Benefits		
279, 338	Veterans Insurance (amended 1958, c. 43)	340	War Veterans Allowance (amended 1955, c. 13; 1957-58, c. 7; 1960, c. 36) (War Veterans Allowance Board)
280	Veterans' Land (amended 1953-54, c. 66; 1959, c. 37)		
281	Veterans Rehabilitation (amended 1959, c. 17)	1952-53 27	Children of War Dead (Education Assistance) (amended 1953-54, c. 2; 1958, c. 25)
289	War Service Grants (amended 1953-54, c. 46; 1959, c. 18)	1953-54 65	Veterans Benefit (amended 1955, c. 43)

PART IV.—FEDERAL GOVERNMENT EMPLOYMENT

The Civil Service Commission.—The Federal Civil Service comprises, in the widest sense, all servants of the Crown—other than those holding political or judicial office—who are employed in a civil capacity and whose remuneration is paid wholly and directly from moneys voted by Parliament. Collectively they form the staffs of the various departments, commissions, boards, bureaus and other agencies of the Federal Government. Nearly every category of occupation is represented in the Civil Service. A few civil servants are appointed by one or both Houses of Parliament directly and a considerable number are appointed by departments and other agencies in accordance with the provisions of certain statutes, generally with executive approval of the Governor in Council. The remainder, by far the majority, are selected and appointed by the Civil Service Commission of Canada.

The Civil Service Commission as the central personnel agency of the Federal Government is the custodian of the merit principle in respect of both initial appointments and promotions. The steps by which the Commission came to be established in its present form constitute the record of Civil Service reform in Canada which began a year after Confederation and culminated in the passing of the Civil Service Act of 1918.

Recruitment.—The recruitment of civil servants is conducted by means of open competitive examination through which every citizen has the right to compete for positions in the service of his country. Examinations are held periodically as the staff requirements of the public service dictate. Any Canadian citizen may apply for headquarters positions open at Ottawa but applicants for local positions must normally be residents of the locality in which the vacancy occurs. Competitive examinations are announced through the press and through posters displayed on the public notice boards of post offices, offices of the National Employment Service, offices of the Civil Service Commission, and elsewhere. The examinations may be written, oral, a demonstration of skill, or any combination of these.

The names of persons successful in Civil Service examinations, arranged in order of rank, are recorded on eligible lists. Examination results are formally announced by publication in the *Canada Gazette* and each candidate—successful or unsuccessful—is advised of his standing. Appointments are made as required from the eligible lists which usually remain valid for one year.

The rank of the various successful candidates on eligible lists is influenced by the 'veterans' preference'. Actually the preference is limited largely, in accordance with its definition by law, to members of the Armed Forces who have served overseas in World War I or II or in the Korean theatre of operations. The highest order of preference is the 'disability preference' accorded to pensioners of the Armed Forces who as a result of their war service have been unable to resume their prewar civilian occupations.

In recent years the Civil Service Commission has decentralized its operations and now has ten district offices and six sub-offices across the country. The Commission is granting an increasing measure of autonomy and responsibility to these offices to permit more efficient service to field agencies.

Staff Training.—In 1947 the Commission set up a Staff Training Division to promote and guide a systematic service-wide training scheme. The training scheme, sponsored by the Commission, is a joint venture undertaken in co-operation with Federal Government departments, most of which have parallel training divisions. The Commission's Training Division is primarily a co-ordinating agency. It promotes and organizes activities, trains departmental instructors in the presentation of courses, prepares and on occassion gives courses of general application to all departments, publishes booklets and other training aids, assists departments in developing training to meet specialized needs, and acts as a general clearing-house for the exchange of information on training matters.

Promotion.—It is a prime objective of the Civil Service Act to create a career service. The result is that promotion, like entrance to the Service, is based on merit and a sound promotion system is in operation. The present procedure involves the consideration of three factors: efficiency of candidates in their present positions, fitness for the vacant positions, and seniority or length of service. Appeal machinery under Commission jurisdiction has been set up for those employees who feel that their qualifications have not been properly assessed.

Position Classification and Compensation.—Provision is made in the Civil Service Act for the classifying of positions in the public service. A system of position classification was instituted in 1919 and positions with like duties and responsibilities were classified alike and remunerated equally. Each position has a title, a set of tasks or duties which are proper to it in the organization in which it occurs and, arising out of these duties, a set of qualifications appropriate for their performance. Positions with duties of similar kind are grouped together under a common title to form a class, and grades within the class reflect the level of responsibility.

The determination of rates of compensation for each class is a continuing responsibility of the Commission and salary and wage surveys are conducted constantly through its Pay Research Bureau, which compiles objective and current information concerning levels of pay within and without the public service for the use not only of the Commission but also of the Government and the employees concerned. Position classification is a mainspring in the Commission's primary function of recruitment, involving the fixing of standards of qualification for each class of position.

Organization and Methods.—In recent years there has been an increasing awareness of the extent to which economical administration depends on the adoption of modern management techniques and devices. In 1948 the Commission set up an Organization and Methods Service, now known as the Management Analysis Division, to study problems of management in collaboration with officials directly responsible for major areas of administration. This Division affords practical assistance to departments and other agencies of the Government through the systematic examination of structure, operations, procedures and work methods. Its growing facilities are offered free of charge to all departments.

Statistics of Federal Government Employment.*—The current monthly survey of Federal Government employment, started in 1952, covers all employees of the Government of Canada; employees in this sense exclude the Governor General and Lieutenant-Governors, Ministers of the Crown and Members of Parliament, judges, persons under contract and members of the Armed Forces, but include Force members of the Royal Canadian Mounted Police. This survey is much more inclusive than the previous statistical series entitled "Civil Service of Canada" and comparisons between the two sets of figures should be made only after very careful study.

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* Prepared in the Public Finance and Transportation Division, Dominion Bureau of Statistics.

The survey is divided into two main portions: (1) departmental branches, services and corporations, and (2) agency and proprietary corporations and other agencies. A summary combines these two groups.

Total Federal Government Employment.—Table **1** shows all Federal Government employees classified by province. Each of the two categories mentioned above is subdivided into its component parts, resulting in five main groups. The first two combine retroactive and overtime payments with regular earnings to obtain gross earnings; the other three record as gross earnings all money earned by the employees covered.

1.—Total Federal Government Employees, by Province, as at Mar. 31, 1960, and Earnings for the Year Ended Mar. 31, 1960

Item and Province or Territory	Departments	Departmental Corporations	Agency Corporations	Proprietary Corporations	Other Agencies	Total
	No.	No.	No.	No.	No.	No.
Employees—						
Newfoundland........	3,824	224	—	5,045	—	9,093
Prince Edward Island	1,053	60	—	1,292	—	2,405
Nova Scotia..........	12,781	415	337	6,085	22	19,640
New Brunswick......	6,406	578	108	8,262	8	15,362
Quebec..............	28,956	3,099	3,817	30,263	214	66,349
Ontario..............	77,452	7,075	4,802	36,372	888	126,589
Manitoba............	9,274	641	58	14,385	647	25,005
Saskatchewan........	5,988	450	14	6,040	15	12,507
Alberta..............	12,189	569	22	6,068	55	18,903
British Columbia.....	18,362	1,184	173	6,756	62	26,537
Yukon and Northwest Territories.........	2,523	7	113	269	—	2,912
Abroad..............	2,510	10	11	8,518	5	11,054
Totals, Employees.....	**181,318**	**14,312**	**9,455**	**129,355**	**1,916**	**336,356**
	$'000	$'000	$'000	$'000	$'000	$'000
Totals, Earnings[1]......	**682,358**	**48,856**	**43,086**	**573,368**	**7,390**	**1,355,058**

[1] Earnings of employees abroad in agency and proprietary corporations and other agencies were included beginning with November 1959 and amounted to $22,176,000; data for previous months were not available.

Departmental Branches, Services and Corporations.—Employees in this group are covered in Tables **2** to **6**; their salaries are paid from the Consolidated Revenue Fund. Definitions of classifications are as follows. "Salaried" employees include all persons paid on the basis of an annual salary rate with the exception of ships' officers who, though paid an annual salary rate, are subject to special treatment under the regulations made pertaining to the Financial Administration Act. The salaried staff are employed in departmental branches, services and corporations which are subject to regulation by the Treasury Board and for which the positions are outlined in detail in the Estimates of Canada, or are established by means of supplementary Treasury Board Minutes. Thus this group of employees includes persons who are subject to the provisions of the Civil Service Act plus salaried persons employed on the staffs of Cabinet Ministers and appointed by statute or by Order in Council, and also the salaried staffs of certain administrative branches of the Government that do not fall under the jurisdiction of the Civil Service Act.

"Prevailing Rate" employees are those who occupy continuing positions that are subject to prevailing rate legislation and are therefore paid on the basis of the going salary for similar work in the area in which the individual is employed. Regulations made under authority of the Financial Administration Act govern the third group entitled "Ships' Officers and Crews".

These three groups comprise what may be called the "regular" employees of the government service. "Casuals and Others" are principally persons employed on a non-continuing basis.

2.—Employees in Departmental Branches, Services and Corporations of the Federal Government, at End of Each Month, Years Ended Mar. 31, 1959 and 1960

NOTE.—Excludes agency and proprietary corporations and other agencies, figures for which are given in Table 7.

Fiscal Year and Month	Salaried	Prevailing Rate	Ships' Officers and Crews	Total	Casuals and Others
	No.	No.	No.	No.	No.
1958-59—					
April	152,944	25,096	2,384	180,424	14,313
May	155,002	25,787	2,534	183,323	15,061
June	155,032	27,422	2,654	185,108	15,900
July	154,162	28,033	2,675	184,870	16,261
August	154,503	27,136	2,692	184,331	15,511
September	153,859	25,295	2,733	181,887	14,849
October	153,758	24,344	2,744	180,846	15,857
November	153,975	24,195	2,689	180,859	15,348
December	154,311	24,111	2,551	180,973	15,693
January	154,996	24,303	2,443	181,742	16,424
February	155,726	24,080	2,399	182,205	15,698
March	156,447	24,085	2,412	182,944	14,965
1959-60—					
April	155,162	23,881	2,488	181,531	13,921
May	156,982	25,029	2,616	184,627	15,023
June	156,451	26,757	2,745	185,953	15,325
July	156,193	27,655	2,875	186,723	16,774
August	155,899	26,627	2,915	185,441	16,567
September	154,619	24,633	2,869	182,121	15,622
October	154,700	23,648	2,707	181,055	14,635
November	155,088	22,913	2,833	180,834	14,582
December	154,957	22,601	2,693	180,251	13,257
January	155,423	22,319	2,581	180,323	13,016
February	156,188	22,370	2,538	181,096	12,229
March	157,352	22,382	2,571	182,305	13,325

3.—Earnings of Employees in Departmental Branches, Services and Corporations of the Federal Government, by Month, Years Ended Mar. 31, 1959 and 1960

NOTE.—Excludes agency and proprietary corporations and other agencies, figures for which are given in Table 7.

Fiscal Year and Month	Salaried	Prevailing Rate	Ships' Officers and Crews	Total	Casuals and Others
	REGULAR EARNINGS				
	$	$	$	$	$
1958-59—					
April	47,105,216	5,917,744	631,281	53,654,241	2,947,923
May	47,647,627	6,326,779	692,748	54,667,154	3,254,223
June	47,844,140	6,370,492	704,553	54,919,185	3,464,185
July	47,904,133	6,868,645	696,824	55,469,602	3,923,442
August	48,010,619	6,681,572	745,300	55,437,491	3,745,937
September	48,032,135	6,131,830	752,177	54,916,142	3,568,386
October	48,315,982	6,276,262	745,493	55,337,737	3,750,981
November	48,340,368	5,731,927	724,685	54,796,980	3,173,926
December	48,430,675	6,111,770	696,367	55,238,812	3,459,201
January	48,693,267	6,215,370	657,538	55,566,175	3,530,869
February	48,930,687	5,551,299	640,579	55,122,565	3,297,248
March	48,999,898	6,025,257	640,557	55,665,712	3,469,663
1959-60—					
April	48,749,450	5,911,267	652,407	55,313,124	3,189,169
May	49,250,178	6,230,737	716,723	56,197,638	3,487,056
June	49,255,618	6,433,781	737,806	56,427,205	3,693,832
July	49,490,407	7,242,952	799,643	57,533,002	4,203,648
August	49,415,782	6,613,743	807,526	56,837,051	3,990,937
September	49,016,770	6,187,662	805,549	56,009,981	3,915,977
October	49,210,582	6,146,833	823,892	56,181,307	3,636,506
November	49,315,618	5,689,239	833,502	55,838,359	3,240,711
December	49,247,505	5,929,361	818,025	55,994,891	3,092,069
January	49,503,851	5,846,704	799,820	56,150,375	2,863,496
February	49,695,565	5,544,253	782,793	56,022,611	2,752,231
March	49,880,864	5,960,972	790,924	56,632,760	3,095,203

3.—Earnings of Employees in Departmental Branches, Services and Corporations of the Federal Government, by Month, Years Ended Mar. 31, 1959 and 1960—concluded

Fiscal Year and Month	Salaried	Prevailing Rate	Ships' Officers and Crews	Total	Casuals and Others
	OVERTIME PAYMENTS REPORTED				
	$	$	$	$	$
1958-59—					
April	674,513	289,611	56,228	1,020,352	100,317
May	703,505	235,271	51,673	990,449	106,438
June	517,811	269,224	56,084	843,119	114,077
July	417,765	403,275	77,139	898,179	169,637
August	365,378	360,690	73,620	799,688	161,112
September	445,051	320,541	88,550	854,142	169,945
October	409,049	256,006	93,954	759,009	145,215
November	460,784	256,728	79,146	796,658	117,159
December	719,974	273,845	62,675	1,056,494	111,347
January	673,435	272,042	49,481	994,958	102,535
February	2,301,641[1]	239,807	51,912	2,593,360	88,098
March	353,922	294,746	47,806	696,474	110,380
1959-60—					
April	778,003	209,614	40,921	1,028,538	94,442
May	441,138	248,998	57,960	748,096	103,163
June	535,987	236,639	68,485	841,111	124,739
July	363,814	307,591	92,775	764,180	182,875
August	338,750	265,280	112,574	716,604	177,441
September	414,258	225,301	80,169	719,728	181,781
October	478,240	249,110	83,258	810,608	140,051
November	563,776	237,611	85,142	886,529	99,103
December	764,078	206,419	58,387	1,028,884	82,431
January	838,152	265,366	58,299	1,161,817	82,167
February	2,289,632	227,526	34,247	2,551,405	68,558
March	416,734	212,606	104,317	733,657	67,427
	RETROACTIVE PAYMENTS REPORTED				
	$	$	$	$	$
1958-59—					
April	—	98,727	—	98,727	14,714
May	160	47,078	—	47,238	10,493
June	1,465	134,990	—	136,455	40,521
July	286	78,867	—	79,153	30,996
August	55,614	66,696	—	122,310	33,056
September	—	63,648	—	63,648	22,398
October	—	43,699	—	43,699	9,828
November	—	32,389	—	32,389	14,453
December	557	22,946	3,063	26,566	16,580
January	4,993	41,127	—	46,120	5,300
February	4,209	60,307	—	64,516	36,742
March	392	235,612	—	236,004	169,031
1959-60—					
April	802	54,728	—	55,530	17,161
May	442	62,164	340	62,946	14,191
June	4,565	109,295	52,368	166,228	30,301
July	2,105	30,924	34,824	67,853	21,106
August	2,979	38,588	10,584	52,151	12,845
September	399	97,101	—	97,500	41,799
October	3,768	41,078	114,052	158,898	17,200
November	22,250	61,285	57,146	140,681	12,935
December	2,691	23,971	281,383	308,045	25,832
January	1,812	12,855	54,733	69,400	13,046
February	7,766	23,419	32	31,217	13,730
March	1,287	38,128	17,803	57,218	31,817

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[1] Includes Christmas overtime pay of Post Office employees.

4.—Employees in Departmental Branches, Services and Corporations of the Federal Government, by Province and Sex, as at Mar. 31, 1960

NOTE.—Excludes agency and proprietary corporations and other agencies, figures for which are given in Table 7.

Province or Territory	Salaried			Prevailing Rate		
	Male	Female	Total	Male	Female	Total[1]
	No.	No.	No.	No.	No.	No.
Newfoundland	2,401	378	2,779	381	53	435
Prince Edward Island	602	121	723	132	17	171
Nova Scotia	6,087	1,878	7,965	2,582	282	2,990
New Brunswick	4,236	1,121	5,357	718	178	926
Quebec	19,458	5,991	25,449	2,891	946	3,848
Ontario	49,880	23,718	73,598	4,522	2,441	7,046
Manitoba	5,796	1,965	7,761	806	432	1,301
Saskatchewan	4,409	1,059	5,468	375	125	541
Alberta	7,254	2,524	9,778	1,036	444	1,859
British Columbia	10,944	3,828	14,772	1,752	638	2,526
Yukon and Northwest Territories	1,046	290	1,336	486	83	739
Abroad	1,349	1,017	2,366	—	—	—
Totals	**113,462**	**43,890**	**157,352**	**15,681**	**5,639**	**22,382**[1]

Province or Territory	Ships' Officers and Crews			Totals			Casuals and Others		
	Male	Female	Total	Male	Female	Total[1]	Male	Female	Total[2]
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland	197	—	197	2,979	431	3,411	509	45	637
Prince Edward Island	97	—	97	831	138	991	103	17	122
Nova Scotia	793	1	794	9,462	2,161	11,749	1,336	100	1,447
New Brunswick	138	—	138	5,092	1,299	6,421	399	155	563
Quebec	480	—	480	22,829	6,937	29,777	1,503	644	2,278
Ontario	134	5	139	54,536	26,164	80,783	2,089	1,318	3,744
Manitoba	12	—	12	6,614	2,397	9,074	563	220	841
Saskatchewan	—	—	—	4,784	1,184	6,009	271	113	429
Alberta	10	—	10	8,300	2,968	11,647	778	200	1,111
British Columbia	688	—	688	13,384	4,466	17,986	1,267	243	1,560
Yukon and Northwest Territories	16	—	16	1,548	373	2,091	254	38	439
Abroad	—	—	—	1,349	1,017	2,366	88	66	154
Totals	**2,565**	**6**	**2,571**	**131,708**	**49,535**	**182,305**[1]	**9,160**	**3,159**	**13,325**[2]

[1] Includes employees undistributed as to sex, totalling 1,062.

[2] Includes employees undistributed as to sex, totalling 1,006.

Table 5 presents statistics for departmental branches, services and corporations on the basis of a classification by function. The purpose of such classification is to supply a means of studying the operation of government without the complication that results from differences in administrative establishment. This analysis is useful in three ways. First, it permits a detailed study of employment by the Government of Canada according to the main purposes or functions and, since these functions are not subject to the periodic changes that alter the administrative structure of the Government, it is possible to develop a statistical series which, with minor exceptions, is consistent over an extended period of time. Secondly, since differences in administrative establishment are eliminated, it is possible to make meaningful comparisons between Federal Government expenditures on employment and similar expenditures by other levels of government. Thirdly, an analysis of the relationship between expenditures on employment and total expenditures may be made with regard to each function.

Table 6 is an administrative analysis of departmental branches, services and corporations, showing data for these bodies as they were organized at Mar. 31, 1960. Because of periodic changes in the administrative structure of the Government, comparisons over a period of years should be based on the classification by function given in Table 5. Although most salaried staffs fluctuate little during the year, the Taxation Branch of the Department of National Revenue increases its staff considerably in March and April because of the heavy flow of income tax returns during that period, the Legislation branches employ extra staff during each session of Parliament, and several departments employ considerable numbers of students in the summer months. Prevailing rate and other types of employment generally reach a peak in numbers during summer and decline to a lower level in winter.

5.—Federal Government Employees as at Mar. 31, 1960, and Regular Earnings for the Year Ended Mar. 31, 1960, classified by Function

NOTE.—Excludes agency and proprietary corporations and other agencies, figures for which are given in summary form in Table 7.

Function	Salaried		Prevailing Rate		Ships' Officers and Crews		Totals		Casuals and Others	
	Employees	Regular Earnings	Employees	Regular Earnings	Employees	Regular Earnings	Employees	Regular Earnings	Employees	Regular Earnings
	No.	$	No.	$	No.	$	No.	$	No.	$
Defence Services	**33,023**	**116,283,453**	**13,984**	**48,299,535**	**613**	**2,106,160**	**47,620**	**166,689,148**	**5,898**	**29,982,039**
Veterans Pensions and Other Benefits	**11,655**	**41,929,572**	**1,671**	**3,014,414**	—	—	**13,326**	**44,943,986**	—	—
General Government	**29,736**	**110,066,868**	**2,970**	**8,067,081**	**6**	**28,856**	**32,712**	**118,162,805**	**512**	**1,319,102**
Executive and administrative	27,105	101,001,106	2,970	8,067,081	6	28,856	30,081	109,100,043	464	1,257,020
Legislative	987[1]	2,822,334[1]	—	—	—	—	987	2,822,334	—	127
Research, planning and statistics	1,644	6,240,428	—	—	—	—	1,644	6,240,428	48	61,955
Protection of Persons and Property	**10,892**	**42,912,260**	—	—	—	—	**10,892**	**42,912,260**	**2**	**8,994**
Law enforcement	183[2]	834,322[2]	—	—	—	—	183	834,322	—	—
Corrections	2,205	8,585,522	—	—	—	—	2,205	8,585,522	2	4,440
Police protection	7,479	28,783,808	—	—	—	—	7,479	28,783,808	—	—
Other	1,025	4,708,608	—	—	—	—	1,025	4,708,608	—	4,554
Transportation and Communications	**9,168**	**37,399,176**	**699**	**2,741,233**	**1,625**	**5,859,065**	**11,492**	**45,999,474**	**1,324**	**6,244,189**
Airways	3,333	13,836,031	304	1,105,563	—	—	3,637	14,941,594	492	2,201,252
Highways, roads and bridges	236	1,347,584	38	390,316	—	—	274	1,737,900	17	205,123
Railways	172	996,526	—	—	—	—	172	996,526	—	—
Telephone, telegraph and wireless	2,374	9,697,288	29	88,448	—	—	2,403	9,785,736	46	243,342
Waterways	2,529	9,403,654	328	1,156,906	1,625	5,859,065	4,482	16,419,625	769	3,594,472
Other	524	2,118,093	—	—	—	—	524	2,118,093	—	—
Health	**2,135**	**8,810,432**	**719**	**1,452,992**	—	—	**2,854**	**10,263,424**	**294**	**516,518**
General	379	1,489,793	4	11,292	—	—	383	1,501,085	—	—
Public health	590	2,890,636	46	111,286	—	—	636	3,001,922	10	13,237
Hospital care	1,166	4,430,003	669	1,330,414	—	—	1,835	5,760,417	284	503,281
Social Welfare	**9,940**	**34,418,008**	**16**	**48,224**	**4**	**11,758**	**9,960**	**34,477,990**	**2,508**	**3,175,292**
Aid to aged persons	19	84,630	—	—	—	—	19	84,630	—	—
Family allowances	834	2,594,429	—	—	—	—	834	2,594,429	—	—
Labour	392	1,804,054	1	13,213	—	—	393	1,817,267	4	8,951
National employment services	7,890	26,573,258	3	10,686	—	—	7,893	26,583,944	2,450	3,162,941
Other social welfare	805	3,361,637	12	24,325	4	11,758	821	3,397,720	54	3,400

For footnotes, see end of table, p. 124.

5.—Federal Government Employees as at Mar. 31, 1960, and Regular Earnings for the Year Ended Mar. 31, 1960, classified by Function —concluded

Function	Salaried		Prevailing Rate		Ships' Officers and Crews		Totals		Casuals and Others	
	Employees	Regular Earnings	Employees	Regular Earnings	Employees	Regular Earnings	Employees	Regular Earnings	Employees	Regular Earnings
	No.	$	No.	$	No.	$	No.	$	No.	$
Recreational and Cultural Services	**1,468**	**6,849,145**	788	4,070,818	—	—	**2,256**	**10,919,963**	**283**	**1,536,418**
Archives, art galleries, museums and libraries	266	1,126,153	9	17,777	—	—	275	1,143,930	19	29,725
Parks, beaches and other recreational areas	473	2,049,609	779	4,053,041	—	—	1,252	6,102,650	214	1,399,263
Other	729	3,673,383	—	—	—	—	729	3,673,383	50	107,430
Education	**1,568**	**6,294,293**	—	—	—	—	**1,568**	**6,294,293**	**348**	**213,050**
Indian and Eskimo schools and schools in N.W.T.	1,559	6,244,666	—	—	—	—	1,559	6,244,666	348	213,050
Universities, colleges and other schools	9	49,627	—	—	—	—	9	49,627	—	—
Natural Resources and Primary Industries	**12,218**	**56,926,934**	**1,401**	**5,568,846**	**318**	**1,337,336**	**13,937**	**63,833,116**	**662**	**3,432,164**
Fish and game	1,595	7,501,397	38	367,742	318	1,337,336	1,951	9,206,475	100	386,280
Forests	371	1,935,341	80	291,293	—	—	451	2,226,634	—	24,128
Lands—settlement and agriculture	7,553	33,892,838	1,038	3,873,461	—	—	8,591	37,766,299	351	2,228,044
Minerals and mines	1,128	6,262,444	70	269,570	—	—	1,198	6,532,014	—	—
Water resources	197	960,288	3	11,535	—	—	200	971,823	18	24,391
Other	1,374	6,374,626	172	755,245	—	—	1,546	7,129,871	193	769,321
Trade and Industrial Development	**1,045**	**4,303,897**	—	—	—	—	**1,045**	**4,303,897**	**45**	**197,528**
Public Service and Trading Enterprises	**159**	**622,291**	—	—	—	—	**159**	**622,291**	**51**	**194,100**
Other	**34,345**	**125,215,861**	**134**	**474,361**	**5**	**25,435**	**34,484**	**125,715,657**	**1,298**	**3,341,441**
Civil Defence	120	574,922	27	61,682	—	—	147	636,604	—	1,873
Other—										
International co-operation and assistance	76	405,637	—	—	—	—	76	405,637	—	—
Immigration and Citizenship	2,634	10,278,457	49	131,751	5	25,435	2,688	10,435,643	61	42,497
External Affairs	1,865	7,101,573	—	—	—	—	1,865	7,101,573	126	79,584
Bullion and coinage	191	810,441	—	—	—	—	191	810,441	—	—
Post Office	25,119[3]	85,742,449[3]	25	146,871	—	—	25,144	85,889,320	562[4]	696,423[4]
Other	4,340	20,302,382	33	134,057	—	—	4,373	20,436,439	549	2,521,064
Grand Totals[5]	**157,352**	**592,032,190**	**22,382**	**73,737,504**	**2,571**	**9,368,610**	**182,305**	**675,138,304**	**13,325**	**41,160,835**

[1] Excludes the Governor General and ten Lieutenant-Governors with salaries amounting to $139,667.

[2] Excludes 330 judges with salaries amounting to $4,754,000.

[3] Excludes 14,218 employees paid from postal revenues, earning $21,666,630.

[4] Excludes Christmas helpers, earning $2,807,009 during the 1959 Christmas season.

[5] Excludes field parties of the Department of Mines and Technical Surveys—prevailing rate employees with earnings of $257,956; ships' officers and crews with earnings of $738,760; and casuals and others with earnings of $1,856.

6.—Federal Government Employees as at Mar. 31, 1960, and Regular Earnings for the Year Ended Mar. 31, 1960, classified by Department and Principal Branch or Service

NOTE.—Excludes agency and proprietary corporations and other agencies, figures for which are given in summary form in Table 7.

Department and Branch or Service	Salaried		Prevailing Rate		Ships' Officers and Crews		Totals		Casuals and Others	
	Employees	Regular Earnings	Employees	Regular Earnings	Employees	Regular Earnings	Employees	Regular Earnings	Employees	Regular Earnings
	No.	$	No.	$	No.	$	No.	$	No.	$
Agriculture	**6,665**	**30,327,633**	**1,038**	**3,871,674**	—	—	**7,703**	**34,199,307**	**322**	**2,128,634**
Administration Branch	327	1,473,937	—	—	—	—	327	1,473,937	—	—
Research Branch	2,717	13,105,745	902	3,406,666	—	—	3,619	16,512,411	—	—
Production and Marketing Branch	2,919	12,653,163	71	273,618	—	—	2,990	12,926,781	63	782,739
Special	702	3,094,788	65	191,390	—	—	767	3,286,178	259	1,345,895
Atomic Energy Control Board	**7**	**38,480**	—	—	—	—	**7**	**38,480**	—	—
Auditor General's Office	**130**	**775,629**	—	—	—	—	**130**	**775,629**	—	—
Board of Broadcast Governors	**18**	**44,352**	—	—	—	—	**18**	**44,352**	—	—
Chief Electoral Officer, Office of the	**17**	**73,916**	—	—	—	—	**17**	**73,916**	—	—
Citizenship and Immigration	**4,300**	**16,632,759**	**59**	**118,624**	**4**	**11,758**	**4,363**	**16,763,141**	**461**	**246,483**
Departmental Administration	148	604,970	1	3,176	—	—	149	608,146	—	—
Citizenship	171	650,321	—	—	—	—	171	650,321	—	—
Immigration Branch	1,903	7,011,227	46	91,123	—	—	1,949	7,102,350	59	30,033
Indian Affairs Branch	2,078	8,366,241	12	24,325	4	11,758	2,094	8,402,324	402	216,450
Civil Service Commission	**639**	**2,837,608**	—	—	—	—	**639**	**2,837,608**	**17**	**9,666**
Defence Production	**1,448**	**6,303,064**	—	—	—	—	**1,448**	**6,303,064**	**1**	**4,155**
External Affairs	**1,889**	**7,249,925**	—	—	—	—	**1,889**	**7,249,925**	**126**	**79,584**
Departmental Administration	817	3,606,793	—	—	—	—	817	3,606,793	—	—
Representation abroad[1]	1,059	3,556,369	—	—	—	—	1,059	3,556,369	126	79,584
International Joint Commission	13	86,763	—	—	—	—	13	86,763	—	—
Finance	**5,033**	**17,554,922**	—	—	—	—	**5,033**	**17,554,922**	**252**	**348,423**
General Administration	4,595	15,896,551	—	—	—	—	4,595	15,896,551	250	344,962
Administration of various Acts, etc.	420	1,605,722	—	—	—	—	420	1,605,722	—	—
Contingencies and miscellaneous	18	52,649	—	—	—	—	18	52,649	2	3,461
Fisheries	**1,527**	**7,161,973**	**38**	**367,742**	**318**	**1,337,336**	**1,883**	**8,867,051**	**86**	**365,645**
General Services	173	767,841	3	6,216	—	—	176	774,057	7	37,935
Field Services	842	3,660,877	34	347,210	247	1,085,705	1,123	5,093,792	68	255,103
Special	30	115,277	1	11,723	13	41,916	44	168,916	—	37,745
Fisheries Research Board of Canada	482	2,617,978	—	2,593	58	209,715	540	2,830,286	11	34,862

For footnote, see end of table, p. 128.

6.—Federal Government Employees as at Mar. 31, 1960, and Regular Earnings for the Year Ended Mar. 31, 1960, classified by Department and Principal Branch or Service—continued

Department and Branch or Service	Salaried		Prevailing Rate		Ships' Officers and Crews		Totals		Casuals and Others	
	Em-ployees	Regular Earnings	Em-ployees	Regular Earnings	Em-ployees	Regular Earnings	Em-ployees	Regular Earnings	Em-ployees	Regular Earnings
	No.	$	No.	$	No.	$	No.	$	No.	$
Governor General and Lieutenant-Governors[2]	**15**	**53,626**	—	—	—	—	**15**	**53,626**	—	**127**
Insurance	**91**	**502,836**	—	—	—	—	**91**	**502,836**	—	—
Justice	**2,525**	**10,094,271**	—	—	—	—	**2,525**	**10,094,271**	**2**	**8,994**
Department	320[3]	1,508,749[3]	—	—	—	—	320	1,508,749	—	4,554
Penitentiaries	2,205	8,585,522	—	—	—	—	2,205	8,585,522	2	4,440
Labour	**8,483**	**29,084,865**	**4**	**23,899**	—	—	**8,487**	**29,108,764**	**2,454**	**3,180,528**
General Administration	544	2,304,722	—	—	—	—	544	2,304,722	4	17,587
Special Services	20	75,710	1	13,213	—	—	21	88,923	—	—
Vocational Training Co-ordination	9	49,627	—	—	—	—	9	49,627	—	—
Government Employees Compensation	20	81,550	—	—	—	—	20	81,550	—	—
Unemployment Insurance Commission	7,890	26,573,256	3	10,686	—	—	7,893	26,583,942	2,450	3,162,941
Legislation	**955**	**2,694,794**	—	—	—	—	**955**	**2,694,794**	—	—
The Senate	169	500,066	—	—	—	—	169	500,066	—	—
House of Commons	725	1,939,572	—	—	—	—	725	1,939,572	—	—
Library of Parliament	61	255,156	—	—	—	—	61	255,156	—	—
Mines and Technical Surveys[4]	**2,226**	**11,849,973**	**75**	**284,837**	**54**	**245,339**	**2,355**	**12,380,149**	—	—
Administration Services	195	863,466	2	7,173	—	—	197	870,639	—	—
Surveys and Mapping Branch	907	4,497,722	1	2,967	54	245,339	962	4,746,028	—	—
Geological Survey of Canada	348	2,263,858	8	27,189	—	—	356	2,291,047	—	—
Mines Branch	581	3,112,051	60	235,208	—	—	641	3,347,259	—	—
Geographical Branch	54	316,048	—	—	—	—	54	316,048	—	—
Dominion Observatories	106	646,167	4	12,300	—	—	110	658,467	—	—
General	16	58,072	—	—	—	—	16	58,072	—	—
Dominion Coal Board	19	92,589	—	—	—	—	19	92,589	—	—
National Defence	**31,523**	**109,819,321**	**13,984**	**48,299,535**	**613**	**2,106,160**	**46,120**	**160,225,016**	**5,997**	**20,977,884**
Departmental Administration	626	2,521,514	11	34,854	—	—	637	2,556,368	—	—
Inspection Services	1,193	4,902,707	54	164,872	—	—	1,247	5,067,579	—	—
Royal Canadian Navy	6,695	23,402,773	3,879	14,420,988	613	2,106,160	11,187	39,929,921	1,635	6,285,328
Canadian Army	11,865	38,634,840	5,130	18,863,216	—	—	16,995	57,498,056	1,959	6,662,961
Royal Canadian Air Force	8,645	28,286,140	4,666	13,906,258	—	—	13,311	42,192,398	2,228	7,521,070
Defence Research and Development	2,499	12,071,347	244	909,347	—	—	2,743	12,980,694	175	508,525
National Film Board	**711**	**3,629,031**	—	—	—	—	**711**	**3,629,031**	**50**	**107,430**
National Gallery of Canada	**64**	**260,441**	**1**	**3,095**	—	—	**65**	**263,536**	**9**	**9,129**

National Health and Welfare	**3,520**	**14,076,353**	**748**	**1,552,126**	**5**	**25,435**	**4,273**	**15,653,914**	**296**	**530,855**
Departmental Administration	336	1,236,978	4	11,292	—	—	340	1,248,270	—	—
National Health Branch	2,211	9,585,394	717	1,479,152	5	25,435	2,933	11,089,981	296	528,982
Welfare Branch	853	2,679,059	—	—	—	—	853	2,679,059	—	—
Civil Defence	120	574,922	27	61,682	—	—	147	636,604	—	1,873
National Research Council	**2,439**	**12,242,522**	—	—	—	—	**2,439**	**12,242,522**	**546**	**2,474,468**
National Revenue	**15,333**	**60,794,506**	**10**	**31,832**	**6**	**28,856**	**15,349**	**60,855,194**	—	—
Customs and Excise Divisions	7,526	32,307,557	9	28,604	6	28,856	7,541	32,365,017	—	—
Taxation Division	7,793	28,396,303	1	3,228	—	—	7,794	28,399,531	—	—
Tax Appeal Board	14	90,646	—	—	—	—	14	90,646	—	—
Northern Affairs and National Resources	**2,137**	**9,570,467**	**1,037**	**5,112,079**	—	—	**3,174**	**14,682,546**	**444**	**2,248,564**
Departmental Administration	161	681,617	—	—	—	—	161	681,617	—	—
Northern Research Co-ordination Centre	10	50,311	—	—	—	—	10	50,311	—	—
National Parks Branch	541	2,389,035	779	4,053,041	—	—	1,320	6,442,076	228	1,419,898
Water Resources Branch	197	960,287	3	11,535	—	—	200	971,822	18	24,391
Northern Administration and Lands Branch	702	2,949,838	171	752,597	—	—	873	3,702,435	193	769,321
Forestry Branch	371	1,935,341	80	291,293	—	—	451	2,226,634	—	24,128
National Museum of Canada	68	320,243	4	3,613	—	—	72	323,856	5	10,826
Canadian Government Travel Bureau	87	283,795	—	—	—	—	87	283,795	—	—
Post Office	**25,119**	**85,742,448**	**25**	**146,871**	—	—	**25,144**	**85,889,319**	**562**	**696,423**
Departmental Administration	316	1,257,299	—	—	—	—	316	1,257,299	—	—
Operations	24,327[5]	82,676,028[5]	25	146,871	—	—	24,352	82,822,899	562[6]	696,423[6]
Transportation	93	434,051	—	—	—	—	93	434,051	—	—
Financial Services	383	1,375,070	—	—	—	—	383	1,375,070	—	—
Privy Council	**165**	**712,943**	—	—	—	—	**165**	**712,943**	—	—
Privy Council Office	85	410,024	—	—	—	—	85	410,024	—	—
Prime Minister's Residence	5	23,100	—	—	—	—	5	23,100	—	—
Special	75	279,819	—	—	—	—	75	279,819	—	—
Public Archives and National Library	**134**	**545,474**	**4**	**11,069**	—	—	**138**	**556,543**	**5**	**9,770**
Public Archives	94	405,668	4	11,069	—	—	98	416,737	5	9,770
National Library	40	139,806	—	—	—	—	40	139,806	—	—
Public Printing and Stationery	**619**	**2,255,922**	**1,146**	**4,520,912**	—	—	**1,765**	**6,776,834**	**10**	**7,938**
Public Works	**5,785**	**19,324,132**	**1,861**	**3,954,797**	**130**	**735,088**	**7,776**	**24,014,017**	**576**	**2,980,202**
General Administration	1,409	6,860,407	—	—	—	—	1,409	6,860,407	2	10,171
Public Buildings Construction and Services	4,181	11,695,535	1,814	3,514,337	—	—	5,995	15,209,872	183	880,822
Harbours and Rivers Engineering Services	76	302,145	9	50,144	130	735,088	215	1,087,377	374	1,884,086
Development Engineering Services	119	466,045	38	390,316	—	—	157	856,361	17	205,123
Royal Canadian Mounted Police	**7,479**	**28,783,806**	—	—	—	—	**7,479**	**28,783,806**	—	—
Secretary of State	**731**	**3,296,702**	—	—	—	—	**731**	**3,296,702**	—	—
General Services	426	1,991,026	—	—	—	—	426	1,991,026	—	—
Patent and Copyright Office	305	1,305,676	—	—	—	—	305	1,305,676	—	—

For footnotes, see end of table, p. 128.

6.—Federal Government Employees as at Mar. 31, 1960, and Regular Earnings for the Year Ended Mar. 31, 1960, classified by Department and Principal Branch or Service—concluded

Department and Branch or Service	Salaried		Prevailing Rate		Ships' Officers and Crews		Totals		Casuals and Others	
	Employees	Regular Earnings	Employees	Regular Earnings	Employees	Regular Earnings	Employees	Regular Earnings	Employees	Regular Earnings
	No.	$	No.	$	No.	$	No.	$	No.	$
Trade and Commerce	**4,089**	**16,330,957**	—	**1,787**	—	—	**4,089**	**16,332,744**	**173**	**552,993**
Departmental Administration	426	1,924,729	—	—	—	—	426	1,924,729	—	—
Trade Commissioner Service	493	1,927,827	—	—	—	—	493	1,927,827	—	—
Exhibitions Branch	39	167,549	—	—	—	—	39	167,549	45	197,528
Standards Branch	384	1,740,690	—	—	—	—	384	1,740,690	—	—
Dominion Bureau of Statistics	1,639	6,180,193	—	—	—	—	1,639	6,180,193	48	61,955
Board of Grain Commissioners	1,041	4,165,474	—	1,787	—	—	1,041	4,167,261	80	293,510
Special	44	192,009	—	—	—	—	44	192,009	—	—
National Energy Board	23	32,486	—	—	—	—	23	32,486	—	—
Transport	**9,881**	**39,436,964**	**681**	**2,422,211**	**1,441**	**4,878,638**	**12,003**	**46,737,813**	**936**	**4,192,940**
Departmental Administration	524	2,118,090	—	—	—	—	524	2,118,090	—	—
The St. Lawrence River Joint Board of Engineers—Canadian Section	3	31,067	—	—	—	—	3	31,067	—	—
Canal Services	315	1,111,319	115	408,681	18	62,921	448	1,582,921	122	263,849
Marine Services	1,525	4,699,999	204	697,762	1,423	4,815,717	3,152	10,213,478	273	1,446,537
Railway and Steamship Services	7	27,420	—	—	—	—	7	27,420	—	—
Air Services	7,263	30,068,160	362	1,315,768	—	—	7,625	31,383,928	541	2,482,554
Air Transport Board	61	277,640	—	—	—	—	61	277,640	—	—
Board of Transport Commissioners for Canada	160	976,494	—	—	—	—	160	976,494	—	—
Canadian Maritime Commission	23	126,775	—	—	—	—	23	126,775	—	—
Veterans Affairs	**11,655**	**41,929,575**	**1,671**	**3,014,414**	—	—	**13,326**	**44,943,989**	—	—
Departmental Administration	556	1,945,011	4	9,348	—	—	560	1,954,359	—	—
District Services	626	2,240,320	126	411,686	—	—	752	2,652,006	—	—
Veterans Welfare Services	764	3,154,407	—	—	—	—	764	3,154,407	—	—
Treatment Services	8,108	27,423,856	1,541	2,593,380	—	—	9,649	30,017,236	—	—
Prosthetic Services	210	822,102	—	—	—	—	210	822,102	—	—
Veterans Bureau	127	551,522	—	—	—	—	127	551,522	—	—
War Veterans Allowance Board	24	123,920	—	—	—	—	24	123,920	—	—
Canadian Pension Commission	386	1,900,070	—	—	—	—	386	1,900,070	—	—
Soldier Settlement and Veterans' Land Act	854	3,768,367	—	—	—	—	854	3,768,367	—	—
Grand Totals	**157,352**	**592,032,190**	**22,382**	**73,737,504**	**2,571**	**9,368,610**	**182,305**	**675,138,304**	**13,325**	**41,160,835**

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[1] Includes "North Atlantic Treaty Organization" and "Special".

[2] Excludes the Governor General and ten Lieutenant-Governors with salaries amounting to $139,667.

[3] Excludes 330 judges with salaries amounting to $4,754,000.

[4] Excludes field parties—prevailing rate employees with earnings of $257,956, ships' crews with earnings of $738,760, and casuals and others with earnings of $1,856.

[5] Excludes 14,218 employees paid from postal revenues, earning $21,666,630.

[6] Excludes Christmas helpers, earning $2,807,009 during the 1959 Christmas season.

Agency and Proprietary Corporations and Other Agencies.—The following are organizations owned by the Federal Government. Employees and earnings are shown by month in Table 7; a provincial distribution of employees and a summary of the total payroll in each of the three groups is given in Table 1, p. 119.

Agency Corporations

- Atomic Energy of Canada Limited
- Canadian Arsenals Limited
- Canadian Commercial Corporation
- Canadian Patents and Development Limited
- Crown Assets Disposal Corporation
- Defence Construction (1951) Limited
- National Battlefields Commission
- National Capital Commission
- National Harbours Board
- Northern Canada Power Commission

Proprietary Corporations

- Canadian Broadcasting Corporation
- Canadian National Railways
- Canadian Overseas Telecommunication Corporation
- Central Mortgage and Housing Corporation
- Cornwall International Bridge Company Limited
- Eldorado Aviation Limited
- Eldorado Mining and Refining Limited
- Export Credits Insurance Corporation
- Farm Credit Corporation
- Northern Transportation Company Limited
- Polymer Corporation Limited
- St. Lawrence Seaway Authority
- Trans-Canada Air Lines

Other Agencies

- Bank of Canada
- Canadian Wheat Board
- Industrial Development Bank
- Northern Ontario Pipe Line Crown Corporation
- Office of the Custodian

7.—Employees and Earnings in Agency and Proprietary Corporations and Other Agencies, by Month, Years Ended Mar. 31, 1959 and 1960

Month	1958-59		1959-60[1]	
	Employees	Earnings	Employees	Earnings
	No.	$'000	No.	$'000
April	135,802	45,443	133,605	47,385
May	140,477	47,505	138,869	50,281
June	143,639	47,486	143,315	51,683
July	145,859	49,558	146,514	54,563
August	145,939	49,690	146,063	53,066
September	143,385	48,814	144,878	52,477
October	139,285	47,657	141,491	52,055
November	134,263	45,426	147,555	53,594
December	133,071	46,621	143,528	53,413
January	132,208	45,738	140,534	51,914
February	131,452	45,380	140,739	51,211
March	131,973	47,882	140,726	52,202

[1] Employees abroad and their earnings included beginning November 1959. As an indication, there were 8,534 such employees at the end of March 1960 and earnings for the period November 1959 to March 1960 amounted to $22,176,000.

PART V.—CANADA'S EXTERNAL RELATIONS*

Canada's Status in the Commonwealth of Nations.—The several stages in the development of the status of Canada have been authoritatively described in the reports of successive Imperial Conferences including that held at London in 1926 which defined the group of self-governing communities consisting of the United Kingdom and the Dominions as "autonomous communities within the British Empire, equal in status, in no way subordinate one to another in any aspect of their domestic or external affairs, though united by a common allegiance to the Crown, and freely associated as members of the British Commonwealth of Nations". That Conference also recognized that, as a consequence of this equality of status, the Governor General of a Dominion "is the representative of the Crown, holding in all essential respects the same position in relation to the administration of public affairs in the Dominion as is held by His Majesty the King in

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* Prepared by the Department of External Affairs.

Great Britain", and that "it is the right of the Government of each Dominion to advise the Crown in all matters relating to its own affairs". Simultaneously with this change in the constitutional relationship between the several parts of the British Commonwealth of Nations there developed as a complementary aspect of nationhood the assumption by the several Dominions of further responsibilities and rights of sovereign States in thei relations with other members of the community of nations. Membership in the League o Nations and more recently in the United Nations, the exercise of treaty-making powers and the establishment of separate diplomatic representation in foreign countries have characterized this phase in the growth of Canada. More explicit recognition of the implication of the principles of equality of status was accorded in the Statute of Westminster of 193 which provided for the removal of the remaining limitations on the legislative autonomy of the Commonwealth nations.

Thus Canada, under the Crown, has equality of status with the United Kingdom and the other Commonwealth nations in both domestic and foreign affairs; its Governmen advises the Crown in the person of the Governor General on all matters relating to Canada Canada has membership in the United Nations; makes its own treaties; appoints it own ambassadors and other representatives abroad; levies its own taxes; makes its ow laws which are executed by a government dependent on the will of a majority of the people and maintains its own naval, military and air forces. In short, Canada has achieved ful status of democratic nationhood within the Commonwealth of Nations.

Canada's International Status.—The growth of Canada's international status i reflected in the development of the Department of External Affairs. A review of th organization and development of that Department is given in the 1952-53 Year Book pp. 101-104; a brief outline is given at p. 98 of this volume.

The following Section 1 covers Canadian diplomatic representation abroad and representation of other countries in Canada. Section 2 deals with Canada's main international activities during 1960 with respect specifically to the Commonwealth, the Unite Nations, and the North Atlantic Treaty Organization. International economic ai programs are covered separately. Although these fields are considered to be the mos significant for the purposes of this publication, it should be noted that Canada's activitie in other areas are also of importance. The *External Affairs Monthly Bulletin** covers a activities of the Department on a detailed, monthly basis.

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* Obtainable from the Queen's Printer, Ottawa, $1 per year.

Section 1.—Diplomatic Representation as at Jan. 1, 1961

NOTE.—Changes in this listing subsequent to Jan. 1, 1961 and names of current Representatives are given *Canadian Representatives Abroad and Representatives of Other Countries in Canada*, published quarterly and obtainab from the Queen's Printer, Ottawa, price 35 cents.

1.—Canadian Representation Abroad

Country and Year Representation Established	Present Status of Representative	Address
Argentina....................1941	Ambassador..................	Bärtolomé Mitre, 478, Buenos Aires
Australia....................1939	High Commissioner..........	State Circle, Canberra
Austria.......................1952	Ambassador..................	Kärntnerring 5, Vienna
Belgium......................1939	Ambassador..................	35, rue de la Science, Brussels
Brazil.........................1941	Ambassador..................	Avenida Presidente Wilson, 165, Rio Janeiro
Burma.......................1958	Ambassador..................	c/o Office of the High Commissioner f Canada, Kuala Lumpur, Malaya (P. Box 990)
Ceylon.......................1953	High Commissioner..........	6 Gregory's Road, Cinnamon Garde Colombo
Chile.........................1942	Ambassador..................	Augustinas 1225, 5th floor, Santiago
Colombia....................1953	Ambassador..................	Carrera 10, 16-92, 8th Floor, (P.O. B Apartado 1618), Bogota
Cuba.........................1945	Ambassador..................	Edificio Ingenieros Civiles, Calle O y Vedado, Havana

1.—Canadian Representation Abroad—continued

Country and Year Representation Established	Present Status of Representative	Address
Czechoslovakia 1943	Minister	Mickiewiczova 6, Prague 6
Denmark 1946	Ambassador	Prinsesse Maries Allé 2, Copenhagen
Dominican Republic 1954	Ambassador	408 Calle El Conde, Ciudad Trujillo
Finland 1949	Ambassador	Borgmastärbrinken C-3, 32, Helsinki
France 1928	Ambassador	35, avenue Montaigne, Paris VIII
Germany 1950	Ambassador	Zitelmannstrasse 22, Bonn
Ghana 1957	High Commissioner	E 115/3 Independence Avenue (Dodowah Road), Accra
Greece 1943	Ambassador	31, avenue Vassilissis Sofias, Athens
Haiti 1954	Ambassador	Route du Canapé Vert, St. Louis de Turgeau, Port-au-Prince
Iceland 1949	Ambassador	c/o Canadian Embassy, Fridtjof Nansens Plass 5, Oslo, Norway
India 1947	High Commissioner	4 Aurangzeb Road, New Delhi
Indonesia 1953	Ambassador	Djalan Budi Kemuliaan No. 6, Djakarta
Iran 1958	Ambassador	Avenue Anatole France at Blvd. Abé Karaj (P.O. Box 1610), Tehran
Ireland 1940	Ambassador	92 Merrion Square West, Dublin
Israel 1953	Ambassador	Farmers' Bldg., 8 Rehov Hakirya, Tel Aviv
Italy 1947	Ambassador	Via G. B. de Rossi 27, Rome
Japan 1929	Ambassador	16 Omote-Machi, 3-Chome, Akasaka Minato-ku, Tokyo
Lebanon 1954	Ambassador	Immeuble Alpha, rue Clemenceau, Beirut
Luxembourg 1945	Ambassador	c/o Canadian Embassy, 35, rue de la Science, Brussels, Belgium
Malaya 1958	High Commissioner	Kuala Lumpur (P.O. Box 990)
Mexico 1944	Ambassador	Melchor Ocampo 463-7, Mexico 5, D.F.
Netherlands 1939	Ambassador	5 and 7 Sophialaan, The Hague
New Zealand 1940	High Commissioner	Government Life Insurance Bldg., Customhouse Quay, C.I. Wellington
Nigeria 1960	High Commissioner	New Barclays Bank Bldg., 40 Marina Drive, Lagos
Norway 1943	Ambassador	Fridtjof Nansens Plass 5, Oslo
Pakistan 1950	High Commissioner	Metropole Hotel, Victoria Road, Karachi
Peru 1944	Ambassador	Edificio Boza, Carabaya 831, Plaza San Martin, Lima
Poland 1943	Ambassador	31 Ulica Katowicka, Saska Kepa, Warsaw
Portugal 1952	Ambassador	Rua Marques da Fronteira No. 8 Lisbon
Spain 1953	Ambassador	Edificio España, Plaza de España 2, Madrid
Sweden 1947	Ambassador	Strandvagon 7-C, Stockholm
Switzerland 1947	Ambassador	88 Kirchenfeldstrasse, Berne
Turkey 1947	Ambassador	Ahmet Agaoglu Sokagi, No. 32, Cankaya, Ankara
Union of South Africa 1940	High Commissioner	Kerry Bldg., 238 Vermeulen St., Pretoria
Union of Soviet Socialist Republics 1943	Ambassador	23 Starokonyushenny Pereulok, Moscow
United Arab Republic 1954	Ambassador	6 Sharia Roustom Pasha, Garden City, Cairo
United Kingdom 1880	High Commissioner	Canada House, Trafalgar Square, London, S.W. 1
United States of America 1927	Ambassador	1746 Massachusetts Avenue, N.W., Washington, D.C.
Uruguay 1952	Chargé d'Affaires *ad interim*	1409 Avenida Agraciada, Piso 7°, Montevideo
Venezuela 1952	Ambassador	Avenida La Estancia No. 10, Caracas
West Indies 1958	Commissioner	Colonial Bldg., 72 South Quay, Port-of-Spain, Trinidad
Yugoslavia 1943	Ambassador	Proliterskih Brigada 69, Belgrade
Other Missions		
Canadian Military Mission (1946)	Head of Mission	Perthshire Block, Olympic Stadium, Headquarters Berlin, (British Sector)
Canadian Delegation to the North Atlantic Council (1952) and Organization for European Economic Co-operation (1950)	Ambassador	1 rue Chavez, Paris XVI
Mission of Canada to the European Communities (1960)	Representative and Ambassador	35, rue de la Science, Brussels 4
Permanent Delegation of Canada to the United Nations (1948)	Permanent Representative	750 Third Avenue, New York, N.Y.
Permanent Delegation of Canada to European Office of the United Nations (1948)	Permanent Representative	16, Parc du Chateau Banquet, Geneva

1.—Canadian Representation Abroad—concluded

Country and Year Representation Established	Present Status of Representative	Address
Consulates		
Brazil........................1947	Consul........................	Rua 7 de Abril 252, Saõ Paulo
The Congo...................1960	Consul General...............	Edifice C.C.C.I. Blvd. Albert 1^{er}, Leopo ville
Germany....................1956	Consul........................	Ferdinandstrasse 69, Hamburg
Republic of the Philippines...1949	Consul General...............	Third Floor, L & S Bldg., 1414 Dewey Blv Manila
United States of America....1948	Consul General...............	607 Boylston Street, Boston 16, Mass.
" 1947	Consul General...............	Suite 1412, Garland Bldg., 111 Nor Wabash Ave., Chicago, Ill.
" 1948	Consul........................	1139 Penobscot Bldg., Detroit 26, Mich.
" 1953	Consul General...............	510 West Sixth St., Los Angeles 14, Cal.
" 1952	Consul General...............	215 International Trade Mart, New Orle 12, La.
" 1943	Consul General...............	680 Fifth Ave., New York, N.Y.
" 1947	Honorary Vice-Consul.........	443 Congress St., Portland, Maine
" 1948	Consul General...............	400 Montgomery St., San Francisco 4, Ca
" 1953	Consul General...............	1407 Tower Bldg., 7th Ave. at Olive W Seattle 1, Wash.

2.—Representation of Other Countries in Canada

Country and Year Representation Established	Present Status of Representative	Address
Argentina....................1941	Ambassador..................	211 Stewart Street, Ottawa
Australia.....................1940	High Commissioner...........	100 Sparks Street, Ottawa
Austria.......................1952	Ambassador..................	Room 401, 85 Range Road, Ottawa
Belgium......................1937	Ambassador..................	168 Laurier Avenue East, Ottawa
Brazil.........................1941	Ambassador..................	305 Stewart Street, Ottawa
Burma........................1958	Ambassador..................	c/o Embassy of Burma, 2300 S. Street N.W Washington 8, D.C., U.S.A.
Ceylon........................1957	High Commissioner...........	77 Powell Avenue, Ottawa
Chile..........................1942	Ambassador..................	Suite 216, 56 Sparks Street, Ottawa
China.........................1942	Ambassador..................	201 Wurtemburg Street, Ottawa
Colombia....................1953	Ambassador..................	Apt. 33, The Roxborough, Ottawa
Cuba..........................1945	Ambassador..................	85 Range Road, Apt. 708, Ottawa
Czechoslovakia..............1942	Minister......................	171 Clemow Avenue, Ottawa
Denmark.....................1946	Ambassador..................	446 Daly Avenue, Ottawa
Dominican Republic.........1954	Ambassador..................	273 Bank Street, Ottawa
Finland.......................1948	Ambassador..................	85 Range Road, Ottawa
France........................1928	Ambassador..................	42 Sussex Drive, Ottawa
Germany.....................1951	Ambassador..................	1 Waverley Street, Ottawa
Greece........................1942	Ambassador..................	Chateau Laurier Hotel, Ottawa
Haiti..........................1954	Ambassador..................	150 Driveway, Hotel Tiffany, Apt. 11 Ottawa
Iceland.......................1948	Ambassador..................	c/o Embassy of Iceland, 1906-23rd N.W., Washington, D.C., U.S.A.
India..........................1947	High Commissioner...........	200 MacLaren Street, Ottawa
Indonesia....................1953	Ambassador..................	275 MacLaren Street, Ottawa
Iran...........................1956	Ambassador..................	Apt. 404, 85 Range Road, Ottawa
Ireland........................1939	Ambassador..................	The Roxborough, Ottawa
Israel.........................1953	Ambassador..................	45 Powell Avenue, Ottawa
Italy...........................1947	Ambassador..................	172 MacLaren Street, Ottawa
Japan.........................1928	Ambassador..................	88 Metcalfe Street, Ottawa
Lebanon......................1955	Ambassador..................	The Roxborough, Ottawa
Luxembourg.................1950	Ambassador..................	c/o Embassy of Luxembourg, 2200 Mass chusetts Ave. N.W., Washington 8, D.C U.S.A.
Mexico........................1944	Ambassador..................	88 Metcalfe Street, Ottawa
Netherlands.................1939	Ambassador..................	12 Marlborough Avenue, Ottawa
New Zealand.................1942	High Commissioner...........	77 Metcalfe Street, Ottawa
Norway.......................1942	Ambassador..................	140 Wellington Street, Ottawa
Pakistan......................1949	High Commissioner...........	505 Wilbrod Street, Ottawa
Peru...........................1944	Ambassador..................	539 Island Park Drive, Ottawa
Poland........................1942	Chargé d'Affaires *ad interim*...	10 Range Road, Ottawa
Portugal......................1952	Ambassador..................	285 Harmer Avenue, Ottawa
Spain..........................1953	Ambassador..................	149 Daly Avenue, Ottawa
Sweden........................1943	Ambassador..................	140 Wellington Street, Ottawa

2.—Representation of Other Countries in Canada—concluded

Country and Year Representation Established		Present Status of Representative	Address
Switzerland	1946	Ambassador	5 Marlborough Avenue, Ottawa
Tunisia	1957	Ambassador	Chateau Laurier Hotel, Ottawa
Turkey	1944	Ambassador	197 Wurtemburg Street, Ottawa
Union of South Africa	1938	High Commissioner	9 Rideau Gate, Ottawa
Union of Soviet Socialist Republics	1942	Ambassador	285 Charlotte Street, Ottawa
United Arab Republic	1954	Ambassador	The Roxborough, Ottawa
United Kingdom	1928	High Commissioner	Earnscliffe, Ottawa
United States of America	1927	Ambassador	100 Wellington Street, Ottawa
Uruguay	1948	Chargé d'Affaires *ad interim*	The Roxborough, Ottawa
Venezuela	1953	Ambassador	The Roxborough, Ottawa
Yugoslavia	1942	Ambassador	17 Blackburn Avenue, Ottawa

Section 2.—International Activities, 1960

Subsection I.—Canada and Commonwealth Relations

Present-day Commonwealth association is based on many things; one of the most important is the constant process of consultation and exchange of views that goes on among Commonwealth Governments in the various Capitals and at the United Nations and other international gatherings. The fact that, by its very nature, such exchange attracts little public attention does not diminish its significance.

In addition to normal Commonwealth discussions, several special Commonwealth meetings took place in 1960; the most important was undoubtedly the conference of Commonwealth Prime Ministers held in London in May, which was attended by Prime Minister Diefenbaker. Affairs in Africa occupied a significant place at this conference. It was agreed that study of a Commonwealth aid program for Africa should be initiated. Ghana gave notice that it intended to adopt a republican constitution but wished to remain in the Commonwealth; the Prime Ministers agreed to this. The Union of South Africa indicated that it too might become a republic following a plebiscite to be held on the subject; the Prime Ministers agreed that their decision on continued South African membership under such a changed status should be postponed until after the plebiscite. The Prime Ministers also agreed that Nigeria should become a full member of the Commonwealth after achieving its independence.

Discussion about the effectiveness of the Commonwealth if membership continues to expand led to the appointment of a Study Group to examine the question of future Commonwealth membership. The problems posed for the Commonwealth by the growth of European trading blocs and the United Kingdom's relationship to them were considered, as well as the possibility of creating a Commonwealth scheme for the exchange of administrative and technical experts. Numerous other matters of interest to Commonwealth countries were discussed, always in the informal and intimate atmosphere which makes Commonwealth Prime Ministers' meetings so valuable to all.

Another Commonwealth conference of significance was the meeting of the Commonwealth Economic Consultative Council held in London in September 1960. The Minister of Finance led the Canadian delegation. At this conference details of the Special Commonwealth African Aid Programme (SCAAP) were worked out and further consideration was given to the emergence of the European Common Market and the European Free Trade Association as important factors on the economic scene of Europe.

An important occasion for the Commonwealth was the attainment of full sovereign independence within the Commonwealth by the Federation of Nigeria on Oct. 1, 1960. As the most populous country in Africa, Nigeria is bound to play an important role in the Commonwealth and elsewhere in world affairs. The Federation's Prime Minister, Sir Abubakar Tafawa Balewa, has made it clear that his country attaches great importance to its Commonwealth membership. The Minister of Finance represented Canada at the Independence Day celebrations in Lagos. Canada is represented in Nigeria on a permanent basis by a High Commissioner whose office was opened early in 1960.

The Commonwealth Scholarship and Fellowship Scheme began to operate during 1960. This scheme is the result of a decision taken at the Commonwealth Trade and Economic Conference held at Montreal in 1958. Details were worked out at the Commonwealth Conference on Education at Oxford in 1959. More than 100 Commonwealth Scholars from many different Commonwealth countries are now studying at Canadian universities. It is expected that Canada will ultimately be awarding 250 of these scholarships each year, and that a total of 1,000 Commonwealth Scholars and Fellows, including Canadians, will be studying in other Commonwealth countries in any one year. This scheme will assist the newly independent Commonwealth States in a most important way and should do much to strengthen Commonwealth ties.

Canada welcomed several distinguished Commonwealth visitors during the latter half of 1959 and 1960, including Mr. R. G. Menzies, Prime Minister of Australia; Tunku Abdul Rahman, Prime Minister of the Federation of Malaya; Sir Ahmadu Bello, Sardauna of Sokoto and Premier of the Northern Region of Nigeria; and Lord Kilmuir, Lord Chancellor of the United Kingdom.

Subsection 2.—Canada and the United Nations

At the beginning of 1960, the members of the United Nations held a reasonable expectation that improved East-West relations would be reflected in progress in the United Nations along lines foreshadowed at the General Assembly in 1959. However, their expectations were dissipated by the failure of the Summit meeting in May, the consequent departure of the Soviet Bloc from the Ten-Nation Disarmament Committee in June, and the crisis in the Congo which continued throughout the second half of 1960.

These factors, together with the prospect of a change in administration in the United States, combined to make the 15th regular session of the General Assembly one of the least productive in the history of the United Nations. The session, which convened in September as usual, was unique in that it began with an *ad hoc* meeting of Heads of Government, which was marked by Mr. Krushchov's strong attack on the Secretary-General and on the structure of the Secretariat. Of the issues facing the 15th session, Canada was particularly interested in the question of arrangements to implement the concepts of an international "food bank" and an international "experts' bank"; the possibility of an expansion of the Security and the Economic and Social Councils in the light of increases in the membership of the United Nations; and in the problem of mustering adequate financial and political support for the United Nations operations in the Congo. In the field of disarmament, Canada pursued an initiative taken at a meeting of the Disarmament Commission in August by continuing to press for the earliest possible resumption of disarmament negotiations, and suggested, among other things, machinery designed to give the middle and smaller powers particularly an opportunity to contribute to the encouragement of disarmament negotiations. The Assembly found itself unable to complete its business in the normal way and adjourned on Dec. 20 after a decision to resume its work on Mar. 7, 1961.

Although it had been strengthened towards the close of 1960 by the addition of 17 new members, mainly from Africa, the United Nations found itself unable to make progress in any important direction. At the end of the year, the effectiveness and the future of United Nations operations in the Congo remained in doubt; the organization's working procedures and certain aspects of its basic structure stood in need of thoughtful review, particularly in the light of increases in membership; its financial position continued to give cause for grave concern; it had proved unable to take positive action to bring about the resumption of East-West contacts either at the Summit or in the field of disarmament;

and it had been obliged to adopt the unusual expedient of deferring a good portion of the work of the General Assembly to a resumed session. The year, which had begun so hopefully, ended with the United Nations facing one of the most difficult and discouraging prospects in its history.

Although not a member of any of the Councils of the United Nations in 1960, Canada followed developments in the Councils with close attention. The Security Council held 71 meetings during 1960, of which 31 were devoted to the situation in the Congo. The Council adopted resolutions authorizing the Secretary-General to take the necessary steps to assist the Government and the people of the Congo to overcome the crisis which independence had precipitated in their country. Initially, the Great Powers were prepared to act together in the Security Council to deal with the situation in the Congo. Subsequently, however, fundamental disagreements between the Great Powers forced the General Assembly to meet in an emergency session in September to consider the Congo situation. Later in the year, during the 15th regular session of the General Assembly, the situation in the Congo was reviewed again, inconclusively. Although the members of the United Nations found great difficulty in agreeing on the proper course of action to take in the Congo, the Security Council and the General Assembly had succeeded, by the end of 1960, in authorizing the establishment in the Congo of a United Nations force of close to 20,000 troops, mainly from African member states, the creation of a special voluntary fund of $100,000,000 to provide emergency support for the civil administration of the Congo, and a generous measure of technical assistance organized with the cooperation of the Specialized Agencies of the United Nations.

During 1960, the Security Council dealt with charges brought against the United States by the U.S.S.R. which had to do with flights by a U-2 and an RB-47 aircraft of the United States. Draft resolutions submitted to the Council by the U.S.S.R. in both these cases were defeated. The matter was subsequently placed on the agenda of the 15th session of the General Assembly, but had not been discussed by the time the Assembly recessed at the end of 1960.

A complaint by Cuba against the United States was referred without a dissenting vote to the Organization of American States. Meetings were also held by the Security Council to hear a charge by Argentina against Israel concerning the Eichmann incident and charges by a number of nations against the Union of South Africa arising from racial incidents in the Union.

The Security Council recommended 17 new nations, mainly African, for membership in the United Nations. These applications were subsequently approved by the General Assembly, bringing the total membership of the organization to 99. The application of Mauritania for membership was vetoed by the Soviet Union, because of a refusal of the majority of members of the Security Council to accept the claim to membership of Outer Mongolia which had been concurrently pressed by the U.S.S.R.

During 1960, the membership of the Security Council was as follows: *Permanent Members*—China, France, the United Kingdom, the United States and the Union of Soviet Socialist Republics; *Non-permanent Members*—Argentina, Ceylon, Ecuador, Italy, Poland and Tunisia. Chile, Liberia and the United Arab Republic were elected at the end of 1960 to replace Argentina, Italy and Tunisia, respectively. In accordance with an agreement reached in 1959, Poland resigned its seat on Dec. 31, 1960 and was replaced by Turkey.

In 1958, Canada completed its most recent three-year term on the 24-member Economic and Social Council. As its name implies, this Council is responsible for international co-operation in the economic and social fields. The Council functions through its regional commissions, which are the Economic Commission for Europe (ECE), Asia and the Far East (ECAFE), Latin America (ECLA) and Africa (ECA). It is also assisted by functional commissions on the Status of Woman, Narcotic Drugs, International Commodity Trade, Population, Statistics, Transport and Communications, Human Rights and Social Conditions. At the end of 1960, Canada was a member of the first four of these commissions.

Canada is also a member of the Governing Council of the United Nations Special Fund, which originated in the Economic and Social Council and is intended to enlarge the scope of existing United Nations programs of assistance in such fields as surveys of water, mineral and potential power resources, the establishment of institutions of public administration, statistics and technology, and development of centres for agricultural and industrial research.

The Trusteeship Council, of which Canada has never been a member, supervises the administration of agreements between the United Nations and those member states which have responsibility for trust territories. The Council consists of the states that administer trust territories and an equal number of non-administering states, including permanent members of the Security Council not represented in the first group, and normally meets twice a year. At the end of 1960 membership of the Council was in imbalance because France, which no longer administers trust territories, remained a member of the Council.

Apart from considering reports from the administering authorities, the Council sends visiting missions to report on conditions in the various trust territories and, directly or through its Committee on Petitions, considers the many communications received from petitioners in the trust territories. The Council also assists the United Nations commissioners who are appointed when necessary by the General Assembly to supervise plebiscites arranged to permit the inhabitants of a particular trust territory to decide important questions concerning the future.

In 1960, three territories emerged from trusteeship, achieved their independence and became members of the United Nations. Togoland and the Republic of the Cameroons had been trust territories previously administered by France; Somalia, along with the former protectorate of British Somaliland, had been a trust territory under Italian administration. Also in 1960, the General Assembly approved the holding of a plebiscite under United Nations supervision in Western Samoa, a trust territory under New Zealand administration, to determine whether the inhabitants wish their territory to become independent on Jan. 1, 1962. A second plebiscite was also approved to be held in the Northern and Southern Cameroons, a trust territory under British administration, to determine whether the inhabitants of this territory wish to merge with the Republic of the Cameroons or with Nigeria. Arrangements were also made to hold elections under United Nations supervision in the Belgian-administered territory of Ruanda-Urundi and to follow the progress of the territory toward independence.

Canadian Financial Contributions to the United Nations.—Canada's assessed share of the costs of United Nations peace-keeping operations in the Congo and the Middle East amounted to approximately $2,200,000 in 1960. In addition, Canada provided air transport facilities, at a cost of about $650,000, to move troops into the Congo. The country's share of the remaining expenses of the United Nations in 1960 was 3.11 p.c. of a net budget of approximately $60,000,000, or some $1,900,000, with an additional $1,800,000 going to the regular assessed budgets of the various Specialized Agencies. A voluntary grant of $1,000,000 was also made to United Nations civilian operations in the Congo.

A number of voluntary programs of assistance are carried on by the United Nations and its Specialized Agencies to which Canada contributed the following in 1960:—

	$
Expanded Programme of Technical Assistance (EPTA)	2,000,000
United Nations Children's Fund (UNICEF)	671,000
United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), including $2,500,000 worth of wheat flour	3,060,000
United Nations High Commissioner for Refugees (UNHCR)	299,000
Special Fund	2,000,000

As a special contribution to World Refugee Year, Canada had, by the end of 1960, admitted two groups of tubercular refugees totalling with their families 553 persons. So successful has been this program that arrangements are being made to admit a third such group. Voluntary donations from private citizens to WRY are expected to total over $1,000,000.

Specialized Agencies.—Canada is a member of all twelve of the Specialized Agencies of the United Nations. These agencies are bodies with wide international responsibilities established by intergovernmental agreement, which act in relationship with the United Nations in order to carry out the aims of the Charter. Co-ordination of the activities of the Specialized Agencies is promoted by the Administrative Committee on Co-ordination established by the Economic and Social Council.

Canada is also a member of the International Atomic Energy Agency which, while not a Specialized Agency, plans its activities with them and co-operates in its work with the Administrative Committee on Co-ordination.

International Labour Organization.—The International Labour Organization was originally associated with the League of Nations, becoming a Specialized Agency of the United Nations in 1946. It brings together representatives of governments, employers and workers from member states in an attempt to promote social justice by improving working and living conditions in all parts of the world. To further this goal, meetings are held, usually on an annual basis, the last of which took place in Geneva in June of 1960. ILO is responsible for the execution of a number of training projects which are financed by the United Nations Special Fund.

As one of the leading industrial countries of the world, Canada is permanently represented on the Governing Body of ILO. (See also Section 10 of the Labour Chapter of this volume.)

World Health Organization.—The World Health Organization, which came into being in 1948, is one of the largest of the Specialized Agencies of the United Nations with a membership of 100. Functioning through the World Health Assembly, an organization composed of an Executive Board, a Secretariat and six Regional Committees, WHO acts as a directing and co-ordinating authority on international health matters. In addition, it provides advisory and technical services to help countries develop and improve their health services. The 13th World Health Assembly was held in Geneva in May 1960. (See also the item "International Health" in Subsection 1, Section 1, Part I of the Public Health, Welfare and Social Security Chapter of this volume.)

Food and Agriculture Organization.—The Food and Agriculture Organization was established in 1945 with the objectives of raising the levels of nutrition and living standards among its members and improving the techniques of the production and distribution of food, agricultural, fisheries and forestry products. To this end FAO collects, analyzes and distributes technical and economic information and encourages appropriate national and international action.

A 25-member Council, on which Canada has served since 1945, meets twice a year to give direction and policy guidance to the Secretariat; the Conference, the governing body of the Organization, meets every other year. The 10th conference took place in Rome late in 1959. (See also Subsection 3, Section 1 of the Agriculture Chapter of this volume.)

The United Nations Educational, Scientific and Cultural Organization.—The United Nations Educational, Scientific and Cultural Organization (UNESCO) was established in 1946 "to contribute to peace and security by promoting collaboration among the nations through education, science and culture in order to further universal respect for justice, for the rule of law, for human rights and fundamental freedoms".

Total membership in the Organization includes 98 states and six associate members. The Organization is made up of three principal organs—the General Conference, which is the policy-making body, the Executive Board and the Secretariat. Representatives from member states make up the General Conference which meets every two years to consider applications for membership, elect the Executive Board, plan the program and approve the budget for the ensuing two-year period. The last General Conference was held at the Headquarters of the Organization in Paris in November and December 1960. (See also Section 4 of Part II of the Education and Research Chapter of this volume.)

International Civil Aviation Organization.—The International Civil Aviation Organization (ICAO), with headquarters in Montreal, is the only Specialized Agency of the United Nations with headquarters in Canada. Canada has been a member of the 21-nation Council, which has sat in almost continuous session in Montreal, since ICAO was provisionally established in 1945. Since 1959 Mr. R. M. Macdonnell, a Canadian who was formerly Deputy Under-Secretary in the Department of External Affairs, has been Secretary-General of ICAO. (See also the item "International Air Agreements", Section 1, Part V of the Transportation Chapter of this volume.)

World Meteorological Organization.—Canada is a member of the World Meteorological Organization (WMO), a Specialized Agency of the United Nations since 1951 but developed from the International Meteorological Organization which was founded in 1878. During the year Mr. P. D. McTaggart-Cowan, Director of Meteorological Services, Department of Transport, was elected to the Executive Committee of WMO and attended the 12th session of the Executive Committee held in WMO's new headquarters building in Geneva in the summer of 1960. The Commission for Maritime Meteorology, one of the subsidiary bodies of WMO, held its fourth session in Utrecht, Holland, in August. Canada was represented by the Vice-President of the Commission, Mr. K. T. McLeod of the Department of Transport.

International Telecommunication Union.—Canada is a member of the International Telecommunication Union (ITU), a Specialized Agency of the United Nations, which traces its origin to the International Telegraph Convention of 1865 and the International Radio Telegraph Convention of 1906. During 1960, the Administrative Council of the ITU met in Geneva in the summer and the International Telegraph and Telephone Consultative Committee, one of the two international consultative committees of the ITU, met in New Delhi, India, late in the year; Canada was represented at both meetings.

Intergovernmental Maritime Consultative Organization.—Canada, as a member of the Intergovernmental Maritime Consultative Organization (IMCO), with headquarters in London, England, sent a large delegation to the International Conference convened in London under IMCO auspices in the early summer of 1960 to amend the International Convention on Safety of Life at Sea, 1948. Canada was one of the countries that signed, subject to ratification, the 1960 Convention, which, when ratified by a sufficient number of countries, will replace the 1948 Convention. In addition, Canada, as a member of the IMCO Council and of the Maritime Safety Committee of IMCO, attended meetings of these subsidiary bodies of IMCO held in London during the year.

The International Monetary Fund.—The International Monetary Fund, set up by the Bretton Woods Conference of 1944, came into being in 1945. It provides machinery for international consultation and collaboration on monetary, payments and exchange problems. Included in these purposes are the promotion of exchange stability, the elimination of exchange restrictions, the establishment of a multilateral system of current payments and the expansion and balanced growth of international trade. Also, member countries under certain conditions may draw on the resources of the Fund, which now amount to some $14,000,000,000. Canada has been represented on the Fund's Board of Executive Directors since 1945.

International Bank for Reconstruction and Development.—The International Bank for Reconstruction and Development (IBRD) was formed at the same time as the International Monetary Fund for three main purposes: (1) to facilitate the investment of capital for productive purposes; (2) to promote private foreign investment by means of guarantees or of participation in loans by private investors; and (3) to make loans when private capital is not available on reasonable terms. Since its inception, the Bank has made over 250 loans in some 50 countries in the aggregate of $5,000,000,000. Canada's subscription to the Bank was raised from $375,000,000 to $750,000,000 in 1959.

The International Finance Corporation.—The function of the International Finance Corporation, which is an affiliate of the IBRD, is to promote the growth of productive private enterprise by assisting private capital, by acting as a clearing house in bringing together investment opportunities and private capital and by helping to enlist managerial skill and experience when not otherwise available to a project. Canada has subscribed $3,520,000 to the capital of the Corporation.

The International Development Association.—The International Development Association, created in 1960 as an affiliate of the IBRD, exists to promote economic development in the less developed parts of the world. To this end the Association, using funds subscribed by member governments, makes loans, usually for long terms and at low interest rates. Its terms are more flexible and bear less heavily on the balance of payments of borrowers than conventional loans. Canada's contribution to the Association is $37,830,000.

Universal Postal Union.—One of the oldest and largest of the Specialized Agencies, the Universal Postal Union (UPU), was founded in Berne in 1874 with the principal aim of improving postal services throughout the world and promoting international collaboration. The Universal Postal Congress is the supreme authority of the UPU and meets every five years to review the Universal Postal Convention and its subsidiary instruments. In the interim, activities of the Union are carried on by an Executive and Liaison Committee, a Consultative Committee on Postal Studies and an International Bureau. At the Congress held in Ottawa in 1958, Canada was elected to the Executive and Liaison Committee.

The International Atomic Energy Agency.—Formed in 1957, the International Atomic Energy Agency (IAEA) is an autonomous international organization under the aegis of the United Nations. The Agency was given a mandate to seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world in a variety of ways.

Because Canada is considered to be one of the five members most advanced in nuclear technology including the production of source materials, this country has served on the Board of Governors since the inception of the Agency. The latest meeting of the organization was held in Vienna in October 1960.

The International Court of Justice.—To "adjust and settle international disputes in conformity with Justice and International Law" is one of the purposes of the United Nations and it was therefore essential to establish a judicial arm for the Organization. The Statute of the International Court of Justice is an integral part of the Charter of the United Nations. All members of the United Nations are *ipso facto* parties to the Statute of the Court. A state that is not a member of the United Nations may, nevertheless, become a party to the Statute of the Court on conditions to be determined in each case by the General Assembly upon the recommendation of the Security Council. Thus at the end of 1960, the total number of parties to the Statute was 102; 99 were members of the United Nations and three (Liechtenstein, San Marino and Switzerland) were non-members. The Court is composed of 15 judges who are elected in individual capacities. His Honour Judge John E. Read of Canada served on the Court from his election to the Court in 1946 until his retirement in 1958. No judge of Canadian nationality is serving on the Court at the present time.

Subsection 3.—Canada and the North Atlantic Treaty Organization*

During 1959-60, the North Atlantic Council continued in permanent session at Paris under the chairmanship of the Secretary-General, Mr. Paul-Henri Spaak. The Canadian Permanent Representative was Mr. Jules Léger, former Under-Secretary of State for External Affairs.

Two Ministerial meetings of the Council were convened during 1959. The regular spring meeting of Foreign Ministers was held in Washington, Apr. 2-4. A special ceremony at the opening session marked the 10th anniversary of the Treaty, which was signed in Washington on Apr. 4, 1949. The Council directed its attention to the central problem posed by the Soviet Union's pronouncements on Berlin and Germany. Discussion centred mainly on the Western position for the negotiations with the Soviet Union scheduled to commence at Geneva later in the spring, upon which there was general agreement The Ministers expressed desire to see outstanding problems solved by negotiation and confirmed the principles contained in the Council's declaration on Berlin of Dec. 16, 1958

The year's work of the Council culminated with the meeting of Foreign, Defence and Finance Ministers held in Paris, Dec. 15-17 and again on Dec. 22 following a meeting during the intervening period of the Heads of Government of the United States, the United Kingdom, France and the Federal Republic of Germany to consider preparations for an East-West Summit conference. In addition, the Foreign Ministers of the United States, the United Kingdom, France, Italy and Canada met on Dec. 21 to discuss arrangements for convening the Ten-Nation Disarmament Committee. The NATO Ministeria meeting was therefore concerned not only with its traditional review of the internationa situation and current NATO defence problems but with the more important matters relating to the forthcoming East-West Summit negotiations and preparation for negotiations with the Soviet Union on disarmament, both in the Ten-Nation Disarmament Committee and at the Summit. Agreement was reached on the arrangements for convening the Summit conference and the meetings of the Disarmament Committee, and for ensuring that there would be full consultation with NATO in preparing the Western position fo these meetings.

On the invitation of the Government of Turkey, the Foreign Ministers convened in Istanbul, May 2-4, 1960, for their annual spring meeting which was devoted mainly to an examination of the proposed position to be adopted by the three Western negotiating powers at the forthcoming Summit conference. After a full discussion, agreement wa reached on the broad lines of the Western position on the central issues of disarmament— Germany and Berlin, and East-West relations. Earlier, at the end of March, a specia meeting of Defence Ministers was held in Paris to review important defence problem and the action taken to implement earlier decisions of the Council in the defence field.

The 1960 annual meeting of Foreign, Defence and Finance Ministers was held i Paris, Dec. 16-18. They reviewed international developments since the failure of th Summit conference, reaffirmed their views on Germany and Berlin and East-West relations and expressed hope for the early resumption of negotiations on disarmament. On the subject of defence they agreed on the importance of maintaining a proper balanc between the conventional and nuclear strength of the NATO forces; they noted with interest a concept for a multilateral MRBM force suggested by the United States an instructed the Permanent Representatives to study it and related matters in detai In addition, they welcomed the assurance of the United States to maintain in the NATO area nuclear weapons made available to NATO.

The meeting also examined problems related to the non-military aspects of long-term planning and underlined the importance of pursuing comprehensive political consultations designed to achieve the closest possible co-ordination of national views an unity of action.

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* The terms of the Treaty and the organization of the Council and subordinate committees are dealt with i the 1954 Year Book at pp. 113-115. A short review of the events leading up to the establishment of NATO and i subsequent membership is given in the 1960 Year Book at p. 167.

Throughout the year, the Permanent Council, together with its subordinate committees and its international staff, continued to devote its attention to international, political, economic and military developments of direct concern to the Alliance, reviewed the defence plans of its members, dealt with expenditures of funds on commonly financed military installations (infrastructure) and studied the measures required to ensure peacetime readiness and civil defence.

Canadian Contributions to NATO.—Canada continued in 1959-60 to provide contributions of Armed Forces to unified NATO commands, material assistance to other NATO countries and financial contributions to NATO common budgets. The Canadian contribution to the integrated forces in Europe comprised an Infantry Brigade Group stationed in Germany and an Air Division of twelve modern jet fighter squadrons at bases in France and Germany. During 1959 the Canadian Government decided to re-equip the eight day-fighter squadrons of the Air Division with a modern strike and reconnaissance aircraft, the CF-104. With the establishment of the North American Air Defence Command (NORAD) in 1958, Canada participated fully with the United States in the defence of the North American Continent, which harbours the main retaliatory forces of the Alliance and is an integral part of the NATO area. In addition, a substantial part of Canada's naval forces has been assigned to the Supreme Allied Commander Atlantic (SACLANT) for the protection of convoys and for the defence of the Canada–United States region, should an emergency arise.

Canada continued to provide assistance to NATO European countries in the form of military equipment, aircrew training, logistic support for material previously transferred, and contributions to NATO military and common infrastructure budgets. Approximately $1,700,000,000 has been allocated for these purposes since 1950. After a peak of $289,000,000 in the year ended Mar. 31, 1954, the annual dollar value of the Canadian Mutual Aid Programme declined to an estimated $54,000,000 for the fiscal year 1960-61. This decline was accounted for by the gradual depletion of Canadian surplus stocks of weapons and equipment, and by the successful completion in July 1958 of the full-scale NATO Air Training Plan carried out at RCAF establishments in Canada; under this training plan, started in 1950, more than 5,500 pilots and navigators from ten member countries have been graduated. A limited number of aircrew from Norway and Denmark are continuing their training in Canada under special agreements.

While changing conditions and requirements have gradually altered the magnitude and content of Canada's Mutual Aid Programme, it continues to play an important role in the build-up of NATO military strength.

Subsection 4.—Canadian External Aid Programs

The Colombo Plan.—The Colombo Plan for Co-operative Economic Development in South and Southeast Asia was conceived at the Commonwealth Meeting of Foreign Ministers held at Colombo, Ceylon, Jan. 9-14, 1950. Although the Colombo Plan was initiated by Commonwealth governments, it is not exclusively a Commonwealth program. It is designed to assist in the economic development and raising of living standards of all countries and territories in the general area of south and southeast Asia. Its membership now includes Australia, Burma, Cambodia, Canada, Ceylon, India, Indonesia, Japan, Laos, Malaya, Nepal, New Zealand, North Borneo, Pakistan, the Philippines, Sarawak, Singapore, Thailand, the United Kingdom and Viet Nam, as well as the United States which is also engaged in a substantial program of economic aid in the same region.

The Colombo Plan is supervised by a Consultative Committee composed of Ministers of the member countries, who meet once a year to review projects, exchange views on policy matters and prepare an annual report. It is, as its name implies, a "consultative" body; no collective policy decisions binding member countries are taken at its meetings. A Council for Technical Co-operation, on which Canada is represented, meets regularly in Ceylon to develop the technical co-operation program of the Colombo Plan. Colomb Plan Day will be celebrated throughout member countries on July 1, 1961 to commemorat the tenth year of Colombo Plan operations.

From inception of the Plan in 1950 through April 1961, Canada will have mad available a total of $331,670,000 for capital and technical assistance projects in south an southeast Asia. At the Commonwealth Trade and Economic Conference held in Montrea in September 1958, Canada announced an increase from $35,000,000 to $50,000,000 i its annual contribution to the Colombo Plan over three years beginning in the year 1959-60

While ten countries are now receiving capital assistance from Canada, the larges contributions have so far been made to India, Pakistan and Ceylon. The Canadia contribution has consisted primarily of direct assistance to various development projects including equipment for multi-purpose irrigation and hydro-electric projects, power generating plants, construction and fisheries projects and resources surveys, as well as educational and laboratory equipment and books. It has also included gifts of raw materials, commodities and foodstuffs, such as industrial metals, asbestos, fertilizer, wheat, flour and butter, from the local sale of which recipient governments have been able to raise funds to meet local costs of economic development projects.

Under the Technical Assistance Program up to October 1960, more than 1,500 persons from all countries in the area had come to Canada for training in a variety of fields, the major ones being public administration and finance, agriculture, co-operatives, engineering, mining and geology, statistics, health, education and social welfare. More than 165 Canadian experts had been sent abroad for service in Colombo Plan countries in such fields as fisheries, agriculture, engineering, mining and prospecting, co-operatives, public administration, education and vocational training, and public health. Other Canadians were employed on aerial resources survey teams and in the installation and operation of capital equipment.

The Consultative Committee of the Colombo Plan held annual meetings at Singapore in 1955, at Wellington in 1956, at Saigon in 1957, at Seattle in 1958, at Jogjakarta in 1959 and at Tokyo in 1960. At the Jogjakarta meeting it was agreed that the Colombo Plan should be extended for another five years from June 1961. Reports of the Committee on progress and future plans are published after each annual meeting; each report also contains sections describing the activities of member countries.

Canada-West Indies Aid Program.—On the attaining of independence of the Federation of the West Indies in 1958, Canada undertook a $10,000,000 program of economic and technical assistance over the period from 1958 to 1963. The first major project in this program is the provision of two passenger-cargo ships for inter-island transportation. A total of $6,250,000 has been earmarked for this project. The vessels are under construction and are expected to be commissioned by the summer of 1961. Tools and equipment valued at $22,000 have also been supplied to a technical school at St. Kitts.

Up to Oct. 31, 1960, training programs had been arranged for 38 individuals from the West Indies in different fields, including public administration, information services, fisheries, etc. The 28 Canadian experts who undertook assignments during this period went to Trinidad, Jamaica, St. Lucia, St. Vincents and St. Kitts. They included soil surveyors and advisers in statistics, legal drafting, housing, education, films, radio broadcasting, postal services and harbour management.

Commonwealth Technical Assistance Program.—At the Commonwealth Trade and Economic Conference held in Montreal in September 1958, Canada announced a decision to provide funds for technical assistance to Commonwealth countries outside the Colombo Plan area, with particular emphasis on the African territories. By the end of March 1961 Canada will have made available $1,130,000 to this program. Ghana and Nigeria received the greatest amount of aid, although some assistance was extended also to British Guiana, Hong Kong and Sierra Leone.

By Oct. 31, 1960, 54 training programs had been arranged since the inception of the plan, the chief fields being agriculture, co-operatives, mining, geology, engineering, public and business administration, health and social welfare. Fourteen Canadians had undertaken advisory assignments in Ghana and Nigeria, in education, public information, public administration, law, and agriculture.

Co-operation with the United Nations and its Specialized Agencies, and with Other International Aid Programs.—In addition to the annual contributions made to the United Nations Expanded Program of Technical Assistance, Canada also assists by arranging training programs in Canada for individuals studying under the auspices of the different Specialized Agencies. This service is also extended to the technical assistance program of the International Co-operation Administration of the United States and to other international aid organizations as well. Up to Oct. 31, 1960, approximately 1,290 individuals had come to Canada through the various agencies from more than a hundred different countries in all parts of the world. Assistance is also given by recruiting Canadians for service with the Specialized Agencies on specific technical assistance assignments in underdeveloped countries.

Administration.—As of Nov. 9, 1960, the administration of Canada's external assistance programs became the responsibility of the External Aid Office, established by Order-in-Council of that date, and placed in charge of an officer known as the Director General of External Aid Programmes. The Director General is responsible to the Secretary of State for External Affairs for the operation and administration of such external assistance programs and related matters, including the Colombo Plan, the Canada–West Indies Aid Programme, the Special Commonwealth African Aid Programme, the Commonwealth Technical Assistance Programme, the Commonwealth Scholarship Scheme and Canadian contributions to aid programs administered by the United Nations and other international agencies.

CHAPTER III.—POPULATION*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

This Chapter presents only a limited summary of the voluminous data on population recorded by the censuses of Canada. More detailed information and extended analyses are published in the Census volumes and bulletins, which are obtainable from the Queen's Printer or the Dominion Bureau of Statistics, Ottawa. A list of such publications and their prices is available on request.

Section 1.—Census of Population

Subsection 1.—History of the Census

A brief account of the early censuses of Canada is given under this heading in the 1956 Year Book at pp. 146-149. More detailed information on the history of census-taking in Canada may be found in Vol. XI (Administrative Report) of the 1951 Census of Canada, in the Administrative Report of the 1941 Census of Canada, and in Vol. I of the 1931 Census of Canada.

The 1961 Census of Canada.—Plans for the 1961 Census—Canada's Tenth Decennial Census since Confederation in 1867—are outlined in the 1960 edition of the Year Book at pp. 171-173. Statistical results of the 1961 Census will be issued in numerous series of reports as the tabulated information becomes available for such major fields of census coverage as population, housing, agriculture, and merchandising and service establishments. The 1962 edition of the Year Book will contain tables giving in summary form such results of the 1961 Census as are available at the time of preparation.

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* Sections 1 and 2 of this Chapter have been revised in the Census (Demography) Division, Dominion Bureau of Statistics.

Subsection 2.—Growth and Density of the Population

The population history of Canada, from the first census in 1666 when 3,215 persons were enumerated to the 1956 Census when the figure was 16,080,791, reveals an outstanding rate of population growth. Although each census period contributed to this growth, the periods 1901-11, 1911-21, 1941-51 and 1951-56 merit particular mention.*

In the first half of the present century, Canada's population increased from 5,371,315 at the beginning of the period to just over 14,000,000 in 1951, or to 13,648,013 if Newfoundland is excluded. In the thirty years up to 1931 the population almost doubled and between 1931 and 1951 another 3,600,000 was added. The most rapid growth took place in the first decade of the century when the population increased by 1,835,000 and the rate of growth was slightly over one-third. Coincident with the settlement of the western provinces, substantial immigration characterized the whole period from the beginning of the century up to the outbreak of World War I; immigrants entering Canada during the first ten years of this period numbered 1,644,147.

Owing partly to the sharp falling off in immigration during the war years and partly to heavier emigration, the rate of increase of Canada's population in the decade 1911-21 was less than in the previous decade; nevertheless, total population advanced by 1,581,000 or about 22 p.c. It should be mentioned that, largely because of the record volume of immigration between 1911 and the outbreak of war, the actual number of immigrants to Canada during this decade was slightly greater than during the period 1901-11, although in terms of total population at the beginning of each of these periods immigration was a relatively less important factor in population growth in the decade 1911-21.

Population growth between 1921 and 1931 was approximately 1,590,000 or only slightly greater than in the previous decade. The rate of increase, at 18 p.c., was less than in the period 1911-21 and only a little more than half the rate recorded in the first decade of the century. Also it is significant that the rate of population growth in Eastern Canada was much closer to the rate of growth in Western Canada than in the period 1901-21. In the decade 1931-41 Canada's population increase, at 11 p.c., was the lowest recorded. Immigration over this decade was not much more than 150,000 or only about one-tenth of the number in each decade since 1901. The depressed conditions existing throughout most of the decade also resulted in a sharp falling off in marriages and in births. As a result, only 1,130,000 persons were added to the population of Canada over this ten-year period.

Despite the almost complete cessation of immigration during World War II, the decade 1941-51 was marked by a record growth in population numbers. Excluding Newfoundland, the increase amounted to 2,141,000. The rate of growth was just over 18 p.c. or about the same rate as was recorded in the census decade following World War I. Including Newfoundland, the rate of growth of the Canadian population in the period 1941-51 was 22 p.c., raising the Canada total as of June 1, 1951 to just over 14,000,000.

During the first five years of the second half of the present century Canada experienced an outstanding development of its economic resources. Reflecting this expansion, population, which in the ten years preceding the 1956 Census had risen by 3,374,000 or 27.4 p.c.,† continued to increase at a high rate over the years between the 1951 and 1956 Censuses. Slightly more than 2,000,000 persons were added to the population of Canada in this period, a 14.8-p.c. increase in five years, raising the total population to 16,080,791 on June 1, 1956. Net immigration accounted for almost 30 p.c. of the total increase in population since the 1951 Census, and natural increase for slightly over 70 p.c. In no comparable period of time in the past was the absolute size of net immigration as large as in this five-year period. In terms of the relative contribution of net immigration to population growth, only in the first decade of the century—when it accounted for 40 p.c. of the total population increase—did this element play a more important role than in the years since 1951.*

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* An outline of the growth of population in Canada since the beginning of the seventeenth century may be found in Vol. I of the 1931 Census. Other accounts of population growth prior to the present century are included in Vol. I of the 1941 Census and Vol. X of the 1951 Census.

† Exclusive of Newfoundland since this province did not come into Confederation until 1949.

The record of population growth by provinces since 1901 given in Table 1 indicates the rapid expansion that took place in the Prairie Provinces up to 1921 and the slowing down in growth that followed during the 1920's and was greatly accentuated during the period 1931-56. It also shows that the Maritime Provinces as a group showed only a slight gain in population between 1901 and 1931—Prince Edward Island actually losing about 15,000 people over this period—and although a somewhat greater growth was experienced from 1931-51, another slow down occurred between the latter year and 1956; that the rate of population increase in Quebec by decades over the fifty years 1901-51 was consistently greater than in Ontario, the larger gains in the latter province resulting from net migration being more than offset by the higher rate of natural increase in Quebec, but that Ontario had taken the lead by 1956; and that the population of British Columbia recorded consistent and, in some decades, spectacular growth.

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* More detailed information on the elements of population growth may be found in 1956 Census Report *Growth of Population in Canada* (Catalogue No. 99-501). See also Section 2, pp. 164-166 for Intercensal Surveys.

1.—Numerical Distribution of Population by Province, and Percentage Change from Preceding Census, Decennial Census Years 1901-51 and 1956

NOTE.—Populations for the decennial census years 1871, 1881 and 1891 are given in the 1956 Year Book, p. 149. The populations of the Prairie Provinces in 1906, 1916, 1926, 1936 and 1946 will be found in the 1951 edition, p. 131.

Province or Territory	1901	1911	1921	1931	1941	1951	1956
	NUMERICAL DISTRIBUTION						
Newfoundland	[1]	[1]	[1]	[1]	[1]	361,416	415,074
Prince Edward Island	103,259	93,728	88,615	88,038	95,047	98,429	99,285
Nova Scotia	459,574	492,338	523,837	512,846	577,962	642,584	694,717
New Brunswick	331,120	351,889	387,876	408,219	457,401	515,697	554,616
Quebec	1,648,898	2,005,776	2,360,510	2,874,662	3,331,882	4,055,681	4,628,378
Ontario	2,182,947	2,527,292	2,933,662	3,431,683	3,787,655	4,597,542	5,404,933
Manitoba	255,211	461,394	610,118	700,139	729,744	776,541	850,040
Saskatchewan	91,279	492,432	757,510	921,785	895,992	831,728	880,665
Alberta	73,022	374,295	588,454	731,605	796,169	939,501	1,123,116
British Columbia	178,657	392,480	524,582	694,263	817,861	1,165,210	1,398,464
Yukon Territory	27,219	8,512	4,157	4,230	4,914	9,096	12,190
Northwest Territories	20,129	6,507	8,143	9,316	12,028	16,004	19,313
Canada	**5,371,315**	**7,206,643**	**8,787,949**[2]	**10,376,786**	**11,506,655**	**14,009,429**	**16,080,791**

For footnotes, see end of table.

1.—Numerical Distribution of Population by Province, and Percentage Change from Preceding Census, Decennial Census Years 1901-51 and 1956—concluded

Province or Territory	1901	1911	1921	1931	1941	1951	1956
	Percentage Change from Preceding Census						
Newfoundland	[1]	[1]	[1]	[1]	[1]	[1]	14.8
Prince Edward Island	−5.3	−9.2	−5.5	−0.7	8.0	3.6	0.9
Nova Scotia	2.0	7.1	6.4	−2.1	12.7	11.2	8.1
New Brunswick	3.1	6.3	10.2	5.2	12.0	12.7	7.5
Quebec	10.8	21.6	17.7	21.8	15.9	21.7	14.1
Ontario	3.2	15.8	16.1	17.0	10.4	21.4	17.6
Manitoba	67.3	80.8	32.2	14.8	4.2	6.4	9.5
Saskatchewan	—	439.5	53.8	21.7	−2.8	−7.2	5.9
Alberta	—	412.6	57.2	24.3	8.8	18.0	19.5
British Columbia	82.0	119.7	33.7	32.3	17.8	42.5	20.0
Yukon Territory	—	−68.7	−51.2	1.8	16.2	85.1	34.0
Northwest Territories	−79.7	−67.7	25.1	14.4	29.1	33.1	20.7
Canada	**11.1**	**34.2**	**21.9**	**18.1**	**10.9**	**21.8**	**14.8**

[1] Populations of Newfoundland (not part of Canada until 1949) were: 1901, 220,984; 1911, 242,619; 1921, 263,033; 1931, 281,500 (estimated); 1941, 303,300 (estimated); and 1945, 321,819. [2] Includes 485 members of the Royal Canadian Navy recorded separately in 1921.

The land area and density of the population per square mile is given by province in Table 2 for census years 1931, 1941, 1951 and 1956. It will be noted that the figures for 1951 and 1956 include the Province of Newfoundland, a fact that should be kept in mind in comparisons with earlier censuses.

2.—Land Area and Density of Population, by Province, Decennial Census Years 1931-51 and 1956

Note.—Certain population density figures in this table have been revised since published in Census Reports, as a result of changes in land areas.

Province or Territory	Land Area in Sq. Miles	Population, 1931		Population, 1941		Population, 1951		Population, 1956	
		Total	Per Sq. Mile	Total	Per Sq. Mile	Total	Per Sq. Mile	Total	Per Sq. Mile
Newfoundland[1]	143,045	...	...	...	...	361,416	2.53	415,074	2.90
Prince Edward Island	2,184	88,038	40.31	95,047	43.52	98,429	45.07	99,285	45.46
Nova Scotia	20,402	512,846	25.14	577,962	28.33	642,584	31.50	694,717	34.05
New Brunswick	27,835	408,219	14.67	457,401	16.43	515,697	18.53	554,616	19.93
Quebec	523,860	2,874,662	5.49	3,331,882	6.36	4,055,681	7.74	4,628,378	8.84
Ontario	344,092	3,431,683	9.97	3,787,655	11.01	4,597,542	13.36	5,404,933	15.71
Manitoba	211,775	700,139	3.31	729,744	3.45	776,541	3.67	850,040	4.01
Saskatchewan	220,182	921,785	4.19	895,992	4.07	831,728	3.78	880,665	4.00
Alberta	248,800	731,605	2.94	796,169	3.20	939,501	3.78	1,123,116	4.51
British Columbia	359,279	694,263	1.93	817,861	2.28	1,165,210	3.24	1,398,464	3.89
Canada (Exclusive of the Territories)	**2,101,454**	**10,363,240**	**5.29**[2]	**11,489,713**	**5.87**[2]	**13,984,329**	**6.65**[3]	**16,049,288**	**7.64**[3]
Yukon Territory	205,346	4,230	0.02	4,914	0.02	9,096	0.04	12,190	0.06
Northwest Territories	1,253,438	9,316	0.01	12,028	0.01	16,004	0.01	19,313	0.02
Canada	**3,560,238**	**10,376,786**	**3.04**[4]	**11,506,655**	**3.37**[4]	**14,009,429**	**3.93**[3]	**16,080,791**	**4.52**[3]

[1] Includes Labrador. [2] Calculated on the basis of 1,958,409 sq. miles which excludes the land area of Newfoundland. [3] Includes Newfoundland. [4] Calculated on the basis of 3,417,193 sq. miles which excludes the land area of Newfoundland.

Subsection 3.—Rural and Urban Population

Before 1951 the population residing within the boundaries of all incorporated cities towns and villages of a province was classified by the census as urban and the remainder as rural. Since the laws governing incorporation vary among provinces, there was nc uniform line of demarcation between the rural and urban population throughout Canada. In the 1951 Census the aggregate number of residents within a given area, rather than provincial legal status, was the main criterion for the rural-urban classification. The population residing in cities, towns and villages of 1,000 or over, whether incorporated or unincorporated, as well as the population of all parts of census metropolitan areas, was defined as urban and that outside such localities as rural. The 1956 Census definition was substantially the same as that used in the Census of 1951 except that the fringe part of other major urban areas were classed as urban.

A change in the composition of urban size groups was made also for the 1956 Census At the 1951 Census, each municipality located within the boundaries of a census metro politan area was allocated to an urban size group according to its own individual size In 1956, each such municipality was classified to the same urban size group as the tota metropolitan area of which it formed a part. In addition, the fringe parts of other majo urban areas were included in the tabulations by urban size groups in the same manne as those of census metropolitan areas.

Table 3 presents the rural and urban population classified by province or territor for 1956. The rural population is further classified by farm and non-farm residence an the urban population by size of locality.

3.—Rural Population classified by Farm and Non-farm, and Urban Population classifie by Size Group, by Province, Census 1956

Province or Territory	Rural			Urban Size Groups				
	Farm[1]	Non-farm	Total	1,000 to 9,999	10,000 to 29,999	30,000 to 99,999	100,000 or Over	Total
Newfoundland	10,138	219,684	229,822	84,036	23,225	77,991	—	185,25
Prince Edward Island	43,112	25,703	68,815	13,763	16,707	—	—	30,47
Nova Scotia	95,381	200,242	295,623	103,996	22,551	—	272,547	399,09
New Brunswick	125,011	175,315	300,326	87,957	30,300	136,033	—	254,29
Quebec	740,387	647,153	1,387,540	649,356	288,039	293,556	2,009,887	3,240,83
Ontario	632,153	669,861	1,302,014	605,924	403,281	801,247	2,292,467	4,102,91
Manitoba	202,163	137,294	339,457	55,907	45,555	—	409,121	510,58
Saskatchewan	360,651	198,011	558,662	98,272	61,118	162,613	—	322,00
Alberta	327,201	160,091	487,292	121,745	62,626	—	451,453	635,82
British Columbia	95,338	276,659	371,997	168,575	67,428	—	790,464	1,026,46
Yukon Territory	40	9,580	9,620	2,570	—	—	—	2,57
Northwest Territories	12	14,756	14,768	4,545	—	—	—	4,54
Canada	**2,631,587**	**2,734,349**	**5,365,936**	**1,996,646**	**1,020,830**	**1,471,440**	**6,225,939**	**10,714,85**

[1] Excludes 115,168 persons living on farms in localities classed as urban.

Populations of Counties and Census Divisions.—Population totals for countie and census divisions for the census years 1951 and 1956 are presented in Table 4. Corre sponding information for the census years 1901-41 is given in the 1952-53 Year Book a pp. 137-141. The 1956 populations of the subdivisions of the counties and census division may be found in Bulletins Nos. 1-1 to 1-5 of the 1956 Census of Canada (Catalogue No 92-501 to 92-505), and further details for the earlier census years in *Ninth Census* *Canada, 1951, Vol. I.*

4.—Populations of the Provinces and Territories, by Counties or Census Divisions, Census Years 1951 and 1956

Province and Division or County	1951	1956
	No.	No.
Canada	**14,009,429**	**16,080,791**
Newfoundland	**361,416**	**415,074**
Division No. 1	149,543	171,213
Division No. 2	22,366	23,980
Division No. 3	20,434	21,675
Division No. 4	15,982	19,631
Division No. 5	28,089	35,215
Division No. 6	27,968	33,738
Division No. 7	35,294	38,209
Division No. 8	36,799	40,629
Division No. 9	17,051	19,970
Division No. 10	7,890	10,814
Prince Edward Island	**98,429**	**99,285**
Kings	17,943	17,853
Prince	37,735	38,007
Queens	42,751	43,425
Nova Scotia	**642,584**	**694,717**
Annapolis	21,747	21,682
Antigonish	11,971	13,076
Cape Breton	120,306	125,478
Colchester	31,536	34,640
Cumberland	39,655	39,598
Digby	19,989	19,869
Guysborough	14,245	13,802
Halifax	162,217	197,943
Hants	23,357	24,889
Inverness	18,390	18,235
Kings	33,183	37,816
Lunenburg	33,256	34,207
Pictou	44,002	44,566
Queens	12,544	12,774
Richmond	10,783	10,961
Shelburne	14,392	14,604
Victoria	8,217	8,185
Yarmouth	22,794	22,392
New Brunswick	**515,697**	**554,616**
Albert	9,910	10,943
Carleton	22,269	23,073
Charlotte	25,136	24,497
Gloucester	57,489	64,119
Kent	26,767	27,492
Kings	22,467	24,267
Madawaska	34,329	36,988
Northumberland	42,994	47,223
Queens	13,206	12,838
Restigouche	36,212	39,720
St. John	74,497	81,392
Sunbury	9,322	10,547
Victoria	18,541	19,020
Westmorland	80,012	85,414
York	42,546	47,083
Quebec	**4,055,681**	**4,628,378**
Abitibi[1]	86,356	99,578
Argenteuil	25,872	28,474
Arthabaska	36,957	41,422
Bagot	19,224	20,213
Beauce	54,973	59,957
Beauharnois	38,748	42,691
Bellechasse	25,117	26,203
Berthier	24,717	26,359
Bonaventure	41,121	43,240
Quebec—continued		
Brome	13,393	13,790
Chambly	77,931	111,979
Champlain	85,745	102,674
Charlevoix	28,259	30,263
Charlevoix East	*14,511*	*15,706*
Charlevoix West	*13,748*	*14,557*
Châteauguay	17,857	22,588
Chicoutimi	115,904	137,999
Compton	23,856	25,057
Deux Montagnes	21,048	26,595
Dorchester	33,313	34,692
Drummond	53,426	55,565
Frontenac	30,733	31,433
Gaspe	62,530	71,896
Gaspe East	*37,442*	*41,319*
Gaspe West	*15,089*	*19,021*
Magdalen Islands	*9,999*	*11,556*
Hochelaga (included in Montreal Island)		
Hull	92,582	109,833
Gatineau	*35,264*	*40,754*
Hull	*57,318*	*69,079*
Huntingdon	13,457	14,278
Iberville	13,507	15,724
Jacques Cartier (included in Montreal Island)		
Joliette	37,251	40,706
Kamouraska	26,672	27,817
Labelle	27,197	28,492
Lac St. Jean	82,006	96,673
Lac St. Jean East	*31,128*	*38,273*
Lac St. Jean West	*50,878*	*58,400*
Laprairie	18,639	24,620
L'Assomption	23,205	28,642
Laval (included in Île Jésus)		
Lévis	43,625	46,839
L'Islet	22,996	24,047
Lotbinière	27,985	30,116
Maskinongé	19,478	20,870
Matane	64,182	71,042
Matane	*30,243*	*34,957*
Matapédia	*33,939*	*36,085*
Mégantic	45,325	53,028
Missisquoi	24,689	26,773
Montcalm	17,520	18,670
Montmagny	24,729	25,969
Montmorency	21,389	24,598
Montmorency No. 1	*17,040*	*19,863*
Montmorency No. 2	*4,349*	*4,735*
Montreal and Île Jésus	1,358,075	1,577,063
Île Jésus	*37,843*	*69,410*
Montreal Island	*1,320,232*	*1,507,653*
Napierville	9,203	10,140
Nicolet	30,335	31,248
Papineau	29,381	30,175
Pontiac	20,696	20,995
Portneuf	43,453	46,098
Quebec	252,890	288,754
Richelieu	30,801	36,086
Richmond	34,102	38,641
Rimouski	53,220	61,357
Rouville	19,506	22,083
Saguenay[2]	42,664	57,364
Shefford	43,722	48,665
Sherbrooke	62,166	70,568
Soulanges	9,233	9,736
Stanstead	34,642	35,319
St. Hyacinthe	38,101	40,302
St. Jean	28,702	34,054
St. Maurice	93,855	102,050

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[1] Includes districts of Abitibi and Mistassini.

[2] Includes New Quebec district.

4.—Populations of the Provinces and Territories, by Counties or Census Divisions, Census Years 1951 and 1956—concluded

Province and County or Division	1951	1956
	No.	No.
Quebec—concluded		
Témiscamingue	55,102	57,661
Témiscouata	65,550	68,362
Rivière du Loup	*37,375*	*39,461*
Témiscouata	*28,175*	*28,901*
Terrebonne	67,437	81,329
Vaudreuil	17,378	22,625
Verchères	17,729	20,908
Wolfe	18,153	18,774
Yamaska	16,071	16,616
Ontario	**4,597,542**	**5,404,933**
Algoma	64,496	82,059
Brant	72,857	77,992
Bruce	41,311	42,070
Carleton	242,247	282,630
Cochrane	83,850	86,768
Dufferin	14,566	15,569
Dundas	15,818	16,978
Durham	30,115	35,827
Elgin	55,518	59,114
Essex	217,150	246,901
Frontenac	66,099	76,534
Glengarry	17,702	18,693
Grenville	17,045	20,563
Grey	58,960	60,971
Haldimand	24,138	26,067
Haliburton	7,670	8,012
Halton	44,003	68,297
Hastings	74,298	83,745
Huron	49,280	51,728
Kenora[1]	39,212	47,156
Kent	79,128	85,362
Lambton	74,960	89,939
Lanark	35,601	38,025
Leeds	38,831	43,077
Lennox and Addington	19,544	21,611
Lincoln	89,366	111,740
Manitoulin	11,214	11,060
Middlesex	162,139	190,897
Muskoka	24,713	25,134
Nipissing	50,517	60,452
Norfolk	42,708	46,122
Northumberland	33,482	38,018
Ontario	87,088	108,440
Oxford	58,818	65,228
Parry Sound	27,371	28,095
Peel	55,673	83,108
Perth	52,584	55,057
Peterborough	60,789	67,981
Prescott	25,576	26,291
Prince Edward	18,559	21,145
Rainy River	22,132	25,483
Renfrew	66,717	78,245
Russell	17,666	18,994
Simcoe	106,482	127,016
Stormont	48,458	56,452
Sudbury	109,590	141,975
Thunder Bay	105,367	122,890
Timiskaming	50,016	50,264
Victoria	27,127	28,248
Waterloo	126,123	148,774
Welland	123,233	149,606
Wellington	66,930	75,691
Wentworth	266,083	316,238
York	1,176,622	1,440,601
Manitoba	**776,541**	**850,040**
Division No. 1	23,861	24,888
Division No. 2	38,971	39,118
Division No. 3	22,870	22,520

Province or Territory and Division	1951	1956
	No.	No.
Manitoba—concluded		
Division No. 4	15,036	14,630
Division No. 5	52,453	60,568
Division No. 6	330,130	368,724
Division No. 7	40,791	45,923
Division No. 8	19,565	22,171
Division No. 9	58,875	72,639
Division No. 10	19,311	18,928
Division No. 11	25,101	24,567
Division No. 12	23,357	23,666
Division No. 13	24,537	24,188
Division No. 14	23,499	22,581
Division No. 15	12,492	12,365
Division No. 16	45,692	52,564
Saskatchewan	**831,728**	**880,665**
Division No. 1	35,481	36,948
Division No. 2	34,714	33,929
Division No. 3	29,477	29,686
Division No. 4	16,691	17,386
Division No. 5	48,877	47,000
Division No. 6	113,614	132,849
Division No. 7	50,421	58,448
Division No. 8	35,211	39,643
Division No. 9	54,939	52,931
Division No. 10	37,633	35,903
Division No. 11	84,365	102,715
Division No. 12	27,896	28,484
Division No. 13	30,721	32,972
Division No. 14	61,615	54,971
Division No. 15	81,160	82,502
Division No. 16	45,211	45,339
Division No. 17	29,048	29,049
Division No. 18	14,654	19,910
Alberta	**939,501**	**1,123,116**
Division No. 1	28,317	34,496
Division No. 2	67,694	74,991
Division No. 3	27,667	30,426
Division No. 4	13,182	14,294
Division No. 5	39,055	38,120
Division No. 6	177,441	237,886
Division No. 7	40,217	40,214
Division No. 8	57,513	64,168
Division No. 9	19,496	17,239
Division No. 10	70,677	71,500
Division No. 11	235,475	323,539
Division No. 12	39,886	44,947
Division No. 13	46,638	45,033
Division No. 14	14,443	15,846
Division No. 15	61,800	70,417
British Columbia	**1,165,210**	**1,398,464**
Division No. 1	27,628	30,584
Division No. 2	60,060	65,615
Division No. 3	77,686	84,871
Division No. 4	649,238	767,921
Division No. 5	215,003	256,355
Division No. 6	41,823	54,304
Division No. 7	18,247	21,022
Division No. 8	40,276	60,067
Division No. 9	20,854	37,211
Division No. 10	14,395	20,514
Yukon Territory	**9,096**	**12,190**
Northwest Territories	**16,001**	**19,313**

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[1] Includes district of Patricia.

Populations of Incorporated Urban Centres.—The growth of Canadian cities with populations of over 30,000 from 1951 to 1956, together with the years of their incorporation as cities, is shown in Table 5. All incorporated cities, towns and villages having populations of 1,000 or over in 1956 are listed in Table 8.

5.—Incorporated Cities with Populations of Over 30,000 at the 1956 Census, with Comparable Data for 1951

City and Province	Year of Incorporation as City	Population		City and Province	Year of Incorporation as City	Population	
		1951	1956			1951	1956
		No.	No.			No.	No.
Brantford, Ont.	1877	36,727	51,869	Quebec, Que.	1832	164,016	170,703
Calgary, Alta.	1893	129,060	181,780	Regina, Sask.	1903	71,319	89,755
Edmonton, Alta.	1904	159,631	226,002	St. Catharines, Ont.	1876	37,984	39,708
Fort William, Ont.	1907	34,947	39,464	Saint John, N.B.	1785	50,779	52,491
Guelph, Ont.	1879	27,386	33,860	St. John's, Nfld.	1888	52,873	57,078
Halifax, N.S.	1841	85,589	93,301	St. Laurent, Que.	1955	20,426	38,291
Hamilton, Ont.	1846	208,321	239,625	Sarnia, Ont.	1914	34,697	43,447
Hull, Que.	1875	43,483	49,243	Saskatoon, Sask.	1906	53,268	72,858
Jacques Cartier, Que.	1951	22,450	33,132	Sault Ste. Marie, Ont.	1912	32,452	37,329
Kingston, Ont.	1846	33,459	48,618	Sherbrooke, Que.	1875	50,543	58,668
Kitchener, Ont.	1912	44,867	59,562	Sudbury, Ont.	1930	42,410	46,482
Lachine, Que.	1909	27,773	34,494	Sydney, N.S.	1904	31,317	32,162
London, Ont.	1855	95,343	101,693	Toronto, Ont.	1834	675,754	667,706
Moncton, N.B.	1890	27,334	36,003	Trois Rivières, Que.	1857	46,074	50,483
Montreal, Que.	1832	1,021,520	1,109,439	Vancouver, B.C.	1886	344,833	365,844
New Westminster, B.C.	1860	28,639	31,665	Verdun, Que.	1912	77,391	78,262
Oshawa, Ont.	1924	41,545	50,412	Victoria, B.C.	1862	51,331	54,584
Ottawa, Ont.	1854	202,045	222,129	Windsor, Ont.	1892	120,049	121,980
Peterborough, Ont.	1905	38,272	42,698	Winnipeg, Man.	1873	235,710	255,093
Port Arthur, Ont.	1907	31,161	38,136				

For census purposes, metropolitan areas have been established for groups of urban communities that are in close economic, geographic and social relationship. The total population of each of the census metropolitan areas in 1956, with the comparable figure from the 1951 Census covering the same area as in 1956, is shown in Table 6. In this table the metropolitan area has been named after the largest city of the urban group.

6.—Populations of Census Metropolitan Areas at the 1956 Census, with Populations of Same Areas in 1951

Metropolitan Area	Population		Metropolitan Area	Population	
	1951	1956		1951	1956
	No.	No.		No.	No.
Calgary, Alta.	140,645	200,449	Saint John, N.B.	78,337	86,015
Edmonton, Alta.	173,748	251,004	St. John's, Nfld.	67,313	77,991
Halifax, N.S.	133,931	164,200	Toronto, Ont.	1,117,470	1,358,028
Hamilton, Ont.	272,327	327,831	Vancouver, B.C.	561,960	665,017
London, Ont.	128,977	154,453	Victoria, B.C.	108,285	125,447
Montreal, Que.	1,395,400	1,620,758	Windsor, Ont.	163,618	185,865
Ottawa, Ont.	292,476	345,460	Winnipeg, Man.	354,069	409,121
Quebec, Que.	274,827	309,959			

The distribution of the population of incorporated cities, towns and villages in Canada by size group is given in Table 7 for the census years 1941, 1951 and 1956.

7.—Populations of Incorporated Cities, Towns and Villages, by Size Group, Census Years 1941, 1951 and 1956

Size Group	1941[1]			1951			1956		
	Number	Population	P.C. of Total Pop.	Number	Population	P.C. of Total Pop.	Number	Population	P.C. of Total Pop.
Over 500,000	2	1,570,464	13.65	2	1,697,274	12.11	2	1,777,145	11.05
Between—									
400,000 and 500,000	—	—	—	—	—	—	—	—	—
300,000 and 400,000	—	—	—	1	344,833	2.46	1	365,844	2.28
200,000 and 300,000	2	497,313	4.32	3	646,076	4.61	4	942,849	5.86
100,000 and 200,000	4	577,356	5.02	4	572,756	4.09	4	576,156	3.58
50,000 and 100,000	7	508,808	4.42	9	588,436	4.20	12	769,323	4.78
25,000 and 50,000	19	605,805	5.26	24	802,380	5.73	27	929,624	5.78
15,000 and 25,000	20	377,505	3.28	34	636,713	4.54	43	853,341	5.31
10,000 and 15,000	24	296,195	2.57	29	347,410	2.48	44	527,802	3.28
5,000 and 10,000	74	510,429	4.44	100	720,077	5.14	117	830,289	5.16
3,000 and 5,000	91	348,709	3.03	119	457,492	3.27	130	497,818	3.10
1,000 and 3,000	337	561,019	4.88	409	698,092	4.98	450	772,013	4.80
Under 1,000	1,060	398,813	3.47	1,049	429,683	3.07	1,039	443,922	2.76
Totals	**1,640**	**6,252,416**	**54.34**	**1,783**	**7,941,222**	**56.68**	**1,873**	**9,286,126**	**57.74**

[1] Newfoundland not included.

Of the 1,873 incorporated urban centres in Canada at the date of the latest census (June 1, 1956), 834 had a population of 1,000 or over. These are listed alphabetically by province in Table 8 with their 1956 populations and comparative figures for 1951.

8.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1956, by Province, with Comparable Data for 1951

Note.—Provincial capital cities are marked by asterisk (*).

Province and Incorporated Centre	1951	1956
	No.	No.
Newfoundland—		
Bay Roberts	1,222	1,306
Burgeo	891	1,138
Burin	796	1,116
Carbonear	3,351	3,955
Channel-Port aux Basques	2,634	3,320
Clarenville	[1]	1,195
Corner Brook	[2]	23,225
Deer Lake	2,655	3,481
Fogo	1,078	1,184
Fortune	867	1,194
Freshwater	810	1,048
Grand Bank	2,148	2,430
Harbour Grace	2,331	2,545
Lewisporte	1,218	2,076
Marystown	[1]	1,460
Mount Pearl Park-Glendale	[1]	1,979
Placentia	614[3]	1,233
St. Anthony	1,380	1,761
*St. John's	52,873	57,078
St. Lawrence	1,451	1,837
Stephenville	[1]	3,762
Wabana	6,460	7,873
Wesleyville	1,304	1,313
Windsor	3,674	4,520
Prince Edward Island—		
*Charlottetown	15,887	16,707
Montague	1,068	1,152
Parkdale	[1]	1,422
Souris	1,183	1,449
Spring Park	[1]	1,370
Summerside	6,547	7,242
Nova Scotia—		
Amherst	9,870	10,301
Antigonish	3,196	3,592
Berwick	1,045	1,134
Bridgetown	1,038	1,041
Bridgewater	4,010	4,445
Canso	1,313	1,261
Dartmouth	15,037	21,093
Digby	2,047	2,145
Dominion	3,143	2,964
Glace Bay	25,586	24,416
*Halifax	85,589	93,301
Hantsport	1,131	1,298
Inverness	2,360	2,026
Kentville	4,240	4,937
Liverpool	3,535	3,500
Lockeport	1,225	1,207

For footnotes, see end of table, p. 158.

8.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1956, by Province, with Comparable Data for 1951—continued

Province and Incorporated Centre	1951	1956
	No.	No.
Nova Scotia—concluded		
Louisburg	1,120	1,314
Lunenburg	2,816	2,859
Mahone Bay	1,019	1,109
Middleton	1,506	1,769
Mulgrave	1,212	1,227
New Glasgow	9,933	9,998
New Waterford	10,423	10,381
North Sydney	7,354	8,125
Oxford	1,466	1,545
Parrsboro	1,906	1,849
Pictou	4,259	4,564
Port Hawkesbury	1,034	1,078
Shelburne	2,040	2,337
Springhill	7,138	7,348
Stellarton	5,575	5,445
Stewiacke	1,018	1,024
Sydney	31,317	32,162
Sydney Mines	8,410	8,731
Trenton	3,089	3,240
Truro	10,756	12,250
Westville	4,301	4,247
Windsor	3,439	3,651
Wolfville	2,313	2,497
Yarmouth	8,106	8,095
New Brunswick—		
Bathurst	4,453	5,267
Campbellton	7,754	8,389
Chatham	5,223	6,332
Dalhousie	4,939	5,468
Dieppe	3,402	3,876
Edmundston	10,753	11,997
*Fredericton	16,018	18,303
Grand Falls	2,365	3,672
Hartland	1,000	1,022
Lancaster	[1]	12,371
Marysville	2,152	2,538
Milltown	2,267	1,975
Moncton	27,334	36,003
Newcastle	4,248	4,670
St. Andrews	1,458	1,534
St. George	1,263	1,322
St. Leonard	1,419	1,593
St. Stephen	3,769	3,491
Sackville	2,873	2,849
Saint John	50,779	52,491
Shediac	2,010	2,173
Shippegan	1,181	1,362
Sussex	3,224	3,403
Woodstock	3,996	4,308
Quebec—		
Acton Vale	3,367	3,547
Alma	7,975	10,822
Amos	4,265	5,145
Amqui	2,599	3,247
Anjou	1,501[4]	2,140
Arthabaska	2,321	2,399
Arvida	11,078	12,919
Asbestos	8,190	8,969
Ayersville	[1]	2,348
Aylmer	4,375	5,294
Bagotville	4,136	4,822
Baie Comeau	3,972	4,332
Baie de Shawinigan	1,223	1,137
Baie d'Urfée	719	1,838
Baie St. Paul	3,716	4,052
Barraute	500	1,081
Beaconsfield	1,888	5,496
Beauceville	1,149	1,459
Beauceville E.	1,573	1,740
Beauharnois	5,694	6,774
Beauport	5,390	6,735
Quebec—continued		
Beaupré	2,015[5]	2,381
Bedford	2,073	2,272
Beebe Plain	1,352	1,363
Belœil	2,992	3,966
Bernierville	1,959	2,431
Berthierville	3,325	3,504
Bic	1,086	1,142
Black Lake	2,800	3,685
Bois des Filions	787	1,648
Boucherville	1,583	3,911
Bourlamaque	2,460	3,018
Bromptonville	2,025	2,316
Brownsburg	3,238	3,412
Buckingham	6,129	6,781
Cabano	2,594	2,350
Cadillac	1,514	1,281
Campbell's Bay	975	1,029
Cap Chat	1,642	1,954
Cap de la Madeleine	18,667	22,943
Causapscal	2,609	2,957
Chambly	2,160	2,817
Chambord	1,070	1,091
Chandler	2,326	3,338
Charlemagne	1,856	2,428
Charlesbourg	5,734	8,202
Charny	3,300	3,639
Châteauguay	2,240	3,265
Châteauguay Heights	627	1,146
Chibougamau	[1]	1,262
Chicoutimi	23,111	24,878
Chicoutimi N.	3,966	6,446
Clermont	2,027	2,628
Coaticook	6,341	6,492
Contrecoeur	1,435	1,662
Cookshire	1,209	1,315
Côte St. Luc	1,083	5,914
Courville	3,138	3,772
Cowansville	4,431	5,242
Crabtree	983	1,103
Danville	2,092	2,296
Deschaillons sur St. Laurent	1,185	1,266
Deschambault	954	1,002
Deschênes	1,169	1,680
Disraëli	2,145	2,473
Dolbeau	4,307	5,079
Donnacona	3,663	4,147
Dorion	2,413	3,089
Dorval	5,293	14,055
Drummondville	14,341	26,284
Drummondville W.	1,275	1,606
Duparquet	1,485	1,144
East Angus	3,714	4,239
East Broughton Station	[1]	1,060
Farnham	4,926	5,843
Ferme Neuve	1,660	1,891
Forestville	709	1,117
Fort Chambly	1,636	1,885
Fort Coulonge	1,431	1,633
Gaspe	1,692	2,194
Gatineau	5,771	8,423
Giffard	8,097	9,964
Granby	21,989	27,095
Grande Rivière	932	1,024
Grand'Mère	11,089	14,023
Greenfield Park	3,379	4,417
Grenville	1,069	1,277
Hampstead	3,260	4,355
Hauterive	283	1,762
Hébertville Station	1,038	1,214
Hudson	1,283	1,549
Hudson Heights	925	1,289
Hull	43,483	49,243
Huntingdon	2,806	2,995

For footnotes, see end of table, p. 158.

8.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 195 by Province, with Comparable Data for 1951—continued

Province and Incorporated Centre	1951	1956
	No.	No.
Quebec—continued		
Iberville	5,185	6,270
Île Perrot	2,008[5]	2,600
Isle Maligne	482	1,761
Jacques Cartier	22,450	33,132
Joliette	16,064	16,940
Jonquière	21,618	25,550
Kénogami	9,895	11,309
Knowlton	1,094	1,328
Labelle	1,003	1,150
L'Abord à Plouffe	4,604	8,099
Lac au Saumon	1,622	1,681
Lachine	27,773	34,494
Lachute	6,179	6,911
Lacolle	1,055	1,141
La Guadeloupe	1,321	1,487
La Malbaie	2,466	2,817
La Pérade	1,111	1,282
La Petite Rivière	740[5]	1,353
La Prairie	4,058	5,372
La Providence	2,693	3,826
LaSalle	11,633	18,973
La Sarre	2,744	3,155
L'Assomption	2,688	3,683
La Tuque	9,538	11,096
Laurentides	1,465	1,513
Lauzon	9,643	10,255
Laval des Rapides	4,998	11,248
Laval W.	1,935	3,818
LeMoyne	4,078	5,662
Lennoxville	2,895	3,149
L'Épiphanie	2,462	2,671
Léry	1,194	1,573
Lévis	13,162	13,644
Linière	949	1,149
L'Isletville	830	1,051
L'Isle Verte	[1]	1,456
Longueuil	11,103	14,332
Loretteville	4,382	4,957
Louiseville	4,088	4,392
Luceville	1,059	1,265
Lyster	961	1,010
Macamic	1,123	1,388
Mackayville	6,494	9,958
Magog	12,423	12,720
Malartic	5,983	6,818
Maniwaki	3,835	5,399
Maple Grove	847	1,115
Marieville	3,117	3,478
Masson	1,475	1,656
Matane	6,345	8,069
McMasterville	1,509	1,738
Mégantic	6,164	6,864
Melocheville[6]	1,300	1,422
Mistassini	2,298	2,912
Montebello	1,397	1,287
Mont Joli	4,938	6,179
Mont Laurier	4,701	5,486
Montmagny	5,844	6,405
Montmorency	5,817	6,077
Montreal	1,021,520	1,109,439
Montreal E.	4,513	4,607
Montreal N.	14,081	25,407
Montreal S.	4,214	5,319
Montreal W.	3,721	4,370
Mount Royal	11,352	16,990
Murdochville	[1]	1,694
Napierville	1,356	1,510
Naudville	1,430	2,894
Nicolet	4,084	3,771
Noranda	9,672	10,323
Normandin	1,678	1,918
Notre Dame d'Hébertville	1,285	1,542
Notre Dame de Lorette	2,516	3,464
Quebec—continued		
Notre Dame de Portneuf	1,144	1,25
Notre Dame du Lac	1,364	1,51
Ormstown	1,233	1,34
Outremont	30,057	29,99
Papineauville	1,024	1,14
Parent	1,255	1,44
Pierreville	1,448	1,58
Pincourt	521	1,43
Plessisville	5,094	5,82
Pointe à Gatineau	3,874	6,17
Pointe au Pic	1,105	1,22
Pointe aux Trembles	8,241	11,98
Pointe Claire	8,753	15,20
Pont Rouge	2,413	2,6
Pont Viau	5,129	8,2
Port Alfred	3,937	7,9
Price	2,810	3,1
Princeville	1,967	2,8
*Quebec	164,016	170,7
Quebec W.	7,295	7,9
Rawdon	1,912	2,0
Richelieu	1,129	1,3
Richmond	3,471	3,8
Rigaud	1,579	1,7
Rimouski	11,565	14,6
Rimouski E.	889	1,2
Rivière des Prairies	4,072[7]	6,8
Rivière du Loup	9,425	9,9
Rivière du Moulin	2,685	4,1
Robertsonville	665	1,0
Roberval	4,897	6,6
Rock Island	1,646	1,6
Rouyn	14,633	17,0
Roxboro	459	1,9
Roxton Falls	945	1,0
Ste. Adèle	961	1,3
St. Agapitville	922	1,0
Ste. Agathe des Monts	5,169	5,1
St. Ambroise	1,032	1,3
Ste. Anne de Beaupré	1,827	1,8
Ste. Anne de Bellevue	3,342	3,6
St. Anselme	991	1,0
St. Antoine des Laurentides	[1]	2,0
St. Basile S.	1,347	1,6
St. Casimir	1,334	1,4
St. Césaire	1,658	1,7
St. Coeur de Marie	1,061	1,2
Ste. Croix	1,080	1,2
St. Cyrille	1,189	1,1
Ste. Dorothée	726	1,1
St. Elzéar	1,596[5]	2,5
St. Émile	1,415[5]	1,6
St. Émilien	1,651	2,0
St. Eustache	2,615	3,7
St. Eustache sur le Lac	3,211	5,8
St. Félicien	2,656	4,1
St. Félix de Valois	1,201	1,3
Ste. Foy	5,236	14,6
St. Fulgence	902	1,0
St. Gabriel de Brandon	2,661	3,2
Ste. Geneviève de Pierrefonds	1,322	2,0
St. Georges (Beauce Co.)	2,657	3,
St. Georges (Champlain Co.)	1,143	1,4
St. Georges W. (Beauce Co.)	2,691	3,6
St. Hilaire	1,436	2,6
St. Hyacinthe	20,236	20,4
St. Jacques	1,729	1,
St. Jean	19,305	24,
St. Jean de Boischatel	1,297	1,4
St. Jean Eudes	[1]	2,
St. Jérôme (Lac St. Jean Co.)	1,480	1,
St. Jérôme (Terrebonne Co.)	17,685	20,
St. Joseph (Beauce Co.)	2,417	2,

For footnotes, see end of table, p. 158.

8.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1956, by Province, with Comparable Data for 1951—continued

Province and Incorporated Centre	1951	1956
	No.	No.
Quebec—concluded		
St. Joseph (St. Hyacinthe Co.)	2,122	2,708
St. Joseph de la Rivière Bleue	1,334	1,481
St. Joseph de Sorel	3,349	3,571
St. Jovite	1,453	1,613
St. Lambert	8,615	12,224
St. Laurent	20,426	38,291
St. Marc des Carrières	2,351	2,457
Ste. Marie	2,431	3,094
St. Martin	[1]	6,440
St. Michel (Montreal Island)	10,539	24,706
St. Noël	830	1,027
St. Pacôme	1,197	1,283
St. Pascal	1,736	1,962
St. Pie	1,182	1,228
St. Pierre (Montreal Island)	4,976	5,276
St. Raphaël	955	1,059
St. Raymond	3,139	3,502
St. Rémi	1,845	2,303
Ste. Rosalie	1,038	1,142
Ste. Rose	3,660	5,378
St. Sauveur des Monts	1,066	1,316
St. Siméon	1,103	1,114
Ste. Thècle	1,468	1,499
Ste. Thérèse	7,038	8,266
St. Tite	2,856	3,183
St. Vincent de Paul	[1]	6,784
Sayabec	2,220	2,281
Schefferville	[1]	1,632
Scotstown	1,350	1,347
Senneterre	1,686	2,197
Sept Îles	1,866	5,592
Shawinigan East	[1]	2,451
Shawinigan Falls	26,903	28,597
Shawinigan South	6,637	10,947
Shawville	1,159	1,281
Sherbrooke	50,543	58,668
Sillery	10,376	13,154
Sorel	14,961	16,476
Stanstead Plain	995	1,134
Sutton	1,389	1,407
Tadoussac	1,064	1,066
Temiscaming	2,787	2,694
Templeton	1,717	2,475
Terrebonne	3,200	4,097
Thetford Mines	15,095	19,511
Thurso	1,973	2,324
Tracy	3,847[8]	6,542
Tring Jonction	751	1,083
Trois Pistoles	3,537	4,039
Trois Rivières	46,074	50,483
Val David	940	1,016
Val d'Or	8,685	9,876
Vallée Jonction	1,279	1,340
Valleyfield (Salaberry de)	22,414	23,584
Val St. Michel	689	1,140
Varennes	1,104	2,047
Verchères	1,201	1,412
Verdun	77,391	78,262
Victoriaville	13,124	16,031
Ville Marie	1,316	1,409
Villeneuve[9]	1,096	1,417
Warwick	2,094	2,248
Waterloo	4,054	4,266
Waterville	1,205	1,373
Weedon Centre	1,066	1,287
Westmount	25,222	24,800
Windsor	4,714	5,886
Ontario—		
Acton	2,880	3,578
Ajax	4,168[10]	5,683
Alexandria	2,204	2,487
Alfred	[1]	1,257
Ontario—continued		
Alliston	1,987	2,426
Almonte	2,672	2,960
Amherstburg	3,638	4,099
Arnprior	4,381	5,137
Arthur	1,088	1,124
Aurora	3,358	3,957
Aylmer	3,483	4,201
Bancroft	1,334	1,669
Barrie	12,514	16,851
Barry's Bay	1,218	1,366
Beamsville	1,712	2,198
Beaverton	1,048	1,099
Belle River	1,431	1,814
Belleville	19,519	20,605
Blenheim	2,459	2,844
Blind River	2,512	3,633
Bobcaygeon	1,207	1,242
Bolton	820	1,093
Bowmanville	5,430	6,544
Bracebridge	2,684	2,849
Bradford	1,483	2,010
Brampton	8,389	12,587
Brantford	36,727	51,869
Bridgeport	1,137	1,402
Brighton	1,967	2,182
Brockville	12,301	13,885
Bronte	[1]	2,024
Burlington	6,017	9,127
Burlington Beach	2,827	3,314
Caledonia	1,681	2,078
Campbellford	3,235	3,425
Capreol	2,002	2,394
Cardinal	1,782	1,994
Carleton Place	4,725	4,790
Casselman	1,158	1,241
Chatham	21,218	22,262
Chelmsford	1,210	2,142
Chesley	1,672	1,629
Chesterville	1,094	1,169
Chippawa	1,762	2,039
Clinton	2,547	2,896
Cobalt	2,230	2,367
Cobourg	7,470	9,399
Cochrane	3,401	3,695
Colborne	1,108	1,240
Collingwood	7,413	7,978
Coniston	2,292	2,478
Copper Cliff	3,974	3,801
Cornwall	16,899	18,158
Crystal Beach	1,204	1,850
Delhi	2,517	3,002
Deseronto	1,522	1,729
Dresden	2,052	2,260
Dryden	2,627	4,428
Dundas	6,846	9,507
Dunnville	4,478	4,776
Durham	1,839	2,067
Eastview	13,799	19,283
Eganville	1,326	1,598
Elmira	2,589	2,916
Elora	1,348	1,457
Englehart	1,585	1,705
Essex	2,741	3,348
Exeter	2,547	2,655
Fenelon Falls	1,304	1,137
Fergus	3,387	3,677
Fonthill	1,412	1,872
Forest	1,790	2,035
Forest Hill	15,305	19,480
Fort Erie	7,572	8,632
Fort Frances	8,038	9,005
Fort William	34,947	39,464
Frankford	1,393	1,491

For footnotes, see end of table, p. 158.

8.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 195 by Province, with Comparable Data for 1951—continued

Province and Incorporated Centre	1951	1956	Province and Incorporated Centre	1951	1956
	No.	No.		No.	No.
Ontario—continued			**Ontario**—continued		
Galt	19,207	23,738	Owen Sound	16,423	16,[illegible]76
Gananoque	4,572	4,981	Palmerston	1,573	1,550
Georgetown	3,452	5,942	Paris	5,249	5,504
Geraldton	3,227	3,263	Parkhill	991	1,043
Glencoe	979	1,044	Parry Sound	5,183	5,378
Goderich	4,934	5,886	Pembroke	12,704	15,434
Gravenhurst	3,005	3,014	Penetanguishene	4,949	5,420
Grimsby	2,773	3,805	Perth	5,034	5,145
Guelph	27,386	33,860	Peterborough	38,272	42,698
Hagersville	1,746	1,964	Petrolia	3,105	3,426
Haileybury	2,346	2,654	Pickering	[1]	1,150
Hamilton	208,321	239,625	Picton	4,287	4,998
Hanover	3,533	3,943	Point Edward	1,838	2,558
Harriston	1,494	1,592	Port Arthur	31,161	38,136
Harrow	1,519	1,851	Port Colborne	8,275	14,028
Havelock	1,132	1,205	Port Credit	3,643	6,350
Hawkesbury	7,194	7,929	Port Dalhousie	2,616	3,087
Hearst	1,723	2,214	Port Dover	2,440	2,790
Hespeler	3,862	3,876	Port Elgin	1,558	1,597
Huntsville	3,286	3,051	Port Hope	6,548	7,522
Ingersoll	6,524	6,811	Port Perry	1,721	2,12
Iroquois	1,086	1,078	Port Stanley	1,491	1,480
Iroquois Falls	1,342	1,478	Prescott	3,518	4,920
Kapuskasing	4,687	5,463	Preston	7,619	9,38
Keewatin	1,634	1,949	Rainy River	1,348	1,35
Kemptville	1,488	1,730	Renfrew	7,360	8,63
Kenora	8,695	10,278	Richmond Hill	2,164	6,67
Kincardine	2,672	2,667	Ridgetown	2,365	2,48
Kingston	33,459	48,618	Riverside	9,214	13,33
Kingsville	2,631	2,884	Rockcliffe Park	1,595	2,09
Kitchener	44,867	59,562	Rockland	2,348	2,75
Lakefield	1,710	1,938	Rodney	885	1,02
La Salle	1,854	2,703	St. Catharines	37,984	39,70
Leamington	6,950	7,856	St. Mary's	3,995	4,18
Leaside	16,233	16,538	St. Thomas	18,173	19,12
Levack	1,833	2,929	Sarnia	34,697	43,44
Lindsay	9,603	10,110	Sault Ste. Marie	32,452	37,32
Listowel	3,469	3,644	Seaforth	2,118	2,12
Little Current	1,397	1,514	Shelburne	1,184	1,24
Lively	[1]	2,840	Simcoe	7,269	8,07
London	95,343	101,693	Sioux Lookout	2,364	2,50
Long Branch	8,727	10,249	Smith's Falls	8,441	8,96
L'Orignal	967	1,067	Smooth Rock Falls	1,102	1,10
Madoc	1,240	1,325	Southampton	1,700	1,64
Markham	1,606	2,873	Stayner	1,280	1,42
Marmora	1,117	1,428	Stirling	1,100	1,19
Massey	937	1,068	Stoney Creek	1,922	4,50
Mattawa	3,097	3,208	Stouffville	1,695	2,30
Meaford	3,178	3,643	Stratford	18,785	19,97
Merritton	4,714	5,404	Strathroy	3,708	4,24
Midland	7,206	8,250	Streetsville	1,139	2,64
Milton	2,451	4,294	Sturgeon Falls	4,962	5,87
Milverton	1,055	1,070	Sudbury	42,410	46,48
Mimico	11,342	13,687	Sutton	1,168	1,31
Mitchell	1,979	2,146	Swansea	8,072	8,59
Morrisburg	1,858	2,131	Tavistock	1,094	1,15
Mount Forest	2,291	2,438	Tecumseh	3,543	4,20
Napanee	3,897	4,273	Thamesville	968	1,07
Newcastle	958	1,098	Thessalon	1,595	1,71
New Hamburg	1,738	1,939	Thornbury	971	1,03
New Liskeard	4,215	4,619	Thorold	6,397	8,05
Newmarket	5,356	7,368	Tilbury	2,682	3,13
New Toronto	11,194	11,560	Tillsonburg	5,330	6,21
Niagara	2,108	2,740	Timmins	27,743	27,55
Niagara Falls	22,874	23,563	*Toronto	675,754	667,70
North Bay	17,944	21,020	Trenton	10,085	11,49
Norwich	1,439	1,611	Tweed	1,562	1,63
Norwood	925	1,017	Uxbridge	1,785	2,06
Oakville	6,910	9,983	Vankleek Hill	1,480	1,64
Orangeville	3,249	3,887	Victoria Harbour	953	1,01
Orillia	12,110	13,857	Walkerton	3,264	3,69
Oshawa	41,545	50,412	Wallaceburg	7,688	7,89
Ottawa	202,045	222,129	Waterdown	1,347	1,75

For footnote, see end of table, p. 158.

8.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1956, by Province, with Comparable Data for 1951—continued

Province and Incorporated Centre	1951	1956
	No.	No.
Ontario—concluded		
Waterford	1,745	1,908
Waterloo	11,991	16,373
Watford	1,201	1,217
Welland	15,382	16,405
Wellington	982	1,077
West Lorne	1,031	1,088
Weston	8,677	9,543
Wheatley	1,021	1,196
Whitby	7,267	9,995
Wiarton	1,955	1,954
Winchester	1,201	1,338
Windsor	120,049	121,980
Wingham	2,642	2,766
Woodbridge	1,699	1,958
Woodstock	15,544	18,347
Manitoba—		
Altona	1,438	1,698
Beauséjour	1,376	1,523
Boissevain	1,015	1,115
Brandon	20,598	24,796
Brooklands	2,915	3,941
Carberry	912	1,065
Carman	1,867	1,884
Dauphin	6,007	6,190
Flin Flon	9,899	10,234
Gimli	1,324	1,660
Killarney	1,262	1,434
Minnedosa	2,085	2,306
Morden	1,862	2,237
Morris	1,193	1,260
Neepawa	2,895	3,109
Portage la Prairie	8,511	10,525
Powerview	1,075	1,078
Rivers	1,209	1,422
Roblin	1,055	1,173
Russell	1,100	1,227
St. Boniface	26,342	28,851
St. James	19,561[5]	26,502
Selkirk	6,218	7,413
Souris	1,584	1,759
Steinbach	2,155	2,688
Stonewall	1,040	1,110
Swan River	2,290	2,644
The Pas	3,376	3,971
Transcona	6,752	8,312
Tuxedo	1,627	1,163
Virden	1,746	3,225
Winkler	1,331	1,634
*Winnipeg	235,710	255,093
Saskatchewan—		
Assiniboia	1,938	2,027
Battleford	1,319	1,498
Biggar	2,214	2,424
Canora	1,568	1,873
Creighton	[1]	1,659
Estevan	3,935	5,264
Eston	1,301	1,625
Fort Qu'Appelle	878	1,130
Gravelbourg	1,197	1,434
Grenfell	1,007	1,080
Gull Lake	728	1,052
Hudson Bay	1,115	1,421
Humboldt	2,435	2,916
Indian Head	1,569	1,721
Kamsack	2,327	2,843
Kerrobert	807	1,037
Kindersley	1,755	2,572
Leader	835	1,085
Lloydminster	3,938	5,077
Maple Creek	1,638	1,974
Meadow Lake	1,956	2,477
Saskatchewan—concluded		
Melfort	2,919	3,322
Melville	4,458	4,948
Moose Jaw	24,355	29,603
Moosomin	1,235	1,390
Nipawin	3,050	3,337
North Battleford	7,473	8,924
Prince Albert	17,149	20,366
Radville	973	1,087
*Regina	71,319	89,755
Rosetown	1,865	2,262
Rosthern	1,183	1,268
Saskatoon	53,268	72,858
Shaunavon	1,625	1,959
Swift Current	7,458	10,612
Tisdale	2,141	2,104
Unity	1,248	1,607
Wadena	1,081	1,154
Watrous	1,228	1,340
Weyburn	7,148	7,684
Wilkie	1,580	1,630
Wolseley	983	1,001
Wynyard	1,326	1,522
Yorkton	7,074	8,256
Alberta—		
Athabasca	1,068	1,293
Barrhead	1,243	1,610
Beverly	2,159	4,602
Blairmore	1,933	1,973
Bonnyville	1,139	1,495
Bow Island	653	1,001
Bowness	2,922	6,217
Brooks	1,648	2,320
Calgary	129,060	181,780
Camrose	4,131	5,817
Cardston	2,487	2,607
Claresholm	1,608	2,431
Coaldale	806	2,327
Cold Lake	[1]	1,097
Coleman	1,961	1,566
Devon	842	1,429
Didsbury	1,180	1,227
Drayton Valley	[1]	2,588
Drumheller	2,601	2,632
*Edmonton	159,631	226,002
Edson	1,956	2,560
Fairview	929	1,260
Forest Lawn	1,079	3,150
Fort Macleod	1,860	2,103
Fort Saskatchewan	1,076	2,582
Grande Prairie	2,664	6,302
Hanna	2,027	2,327
High Prairie	1,141	1,743
High River	1,888	2,102
Innisfail	1,417	1,883
Jasper Place	9,139	15,957
Lacombe	2,277	2,747
Leduc	1,842	2,008
Lethbridge	22,947	29,462
Magrath	1,320	1,382
McLennan	1,074	1,092
McMurray	926	1,110
Medicine Hat	16,364	20,826
Nanton	934	1,047
Olds	1,617	1,980
Peace River	1,672	2,034
Pincher Creek	1,456	1,729
Ponoka	2,574	3,387
Raymond	2,279	2,399
Redcliff	1,538	2,001
Red Deer	7,575	12,338
Redwater	1,306	1,065
Rocky Mountain House	1,147	1,285

For footnotes, see end of table, p. 158.

8.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1 by Province, with Comparable Data for 1951—concluded

Province and Incorporated Centre	1951	1956	Province or Territory and Incorporated Centre	1951	19
	No.	No.		No.	N
Alberta—concluded			**British Columbia**—concluded		
St. Albert	1,129	1,320	Lake Cowichan	1,628	1
St. Paul	1,407	2,229	Langley	[1]	2
Stettler	2,442	3,359	Lillooet	469	1
Stony Plain	878	1,098	Merritt	1,251	1
Sylvan Lake	985	1,114	Mission City	2,668	3
Taber	3,042	3,688	Nanaimo	7,196	12
Three Hills	1,026	1,095	Nelson	6,772	7
Vegreville	2,223	2,574	New Westminster	28,639	31
Vermilion	1,982	2,196	North Kamloops	1,979	4
Vulcan	1,040	1,204	North Vancouver	15,687	19
Wainwright	1,996	2,653	Oliver	1,000	1
Westlock	1,111	1,136	Parksville	882	1
Wetaskiwin	3,824	4,476	Penticton	10,548	11
			Port Alberni	7,845	10
			Port Coquitlam	3,232	4
British Columbia—			Port Moody	2,246	2
Alberni	3,323	3,947	Prince George	4,703	10
Armstrong	1,126	1,197	Prince Rupert	8,546	10
Burns Lake	801	1,016	Princeton	[1]	2
Campbell River	1,986	3,069	Quesnel	1,587	4
Castlegar	1,329	1,705	Revelstoke	2,917	3
Chilliwack	5,663	7,297	Rossland	4,604	4
Comox	714	1,151	Salmon Arm	1,201	1
Courtenay	2,553	3,025	Sidney	[1]	1
Cranbrook	3,621	4,562	Smithers	1,204	1
Creston	1,626	1,844	Squamish	589	1
Cumberland	971	1,039	Terrace	961	1
Dawson Creek	3,589	7,531	Trail	11,430	11
Duncan	2,784	3,247	Vancouver	344,833	365
Fernie	2,551	2,808	Vanderhoof	644	1
Fort St. John	884	1,908	Vernon	7,822	8
Grand Forks	1,646	1,995	*Victoria	51,331	54
Hope	1,668	2,226	Warfield	[1]	2
Kamloops	8,099	9,096	Williams Lake	913	1
Kelowna	8,517	9,181			
Kimberley	5,933	5,774			
Kinnaird	947	1,305	**Yukon Territory**—		
Ladysmith	2,094	2,107	*Whitehorse	2,594	2

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[1] Not incorporated in 1951. [2] Towns of Corner Brook E., Corner Brook W. and Curling amalgamat form part of Corner Brook city Jan. 1, 1956. [3] Rural district in 1951. [4] Rural municipality Léonard de Port Maurice in 1951. [5] Rural municipality in 1951. [6] Previous to 1953 called La Louis. [7] Rural municipality of St. Joseph de la Rivière des Prairies in 1951. [8] Rural municipal St. Joseph in 1951. [9] Previous to June 16, 1951 called Beauport E. [10] Improvement district in 195

Subsection 4.—Sex and Age Distribution

Sex.—The sex distribution of the Canadian people has been characterized early colonial times by a preponderance of males although this condition has been gre modified in more recent years. In 1666 during the early years of settlement by Fr immigrants 63.3 p.c. of the population were males. In 1784, when British immigratio Canada was commencing, there were 54,064 males and 50,759 females and by the mi of the nineteenth century there were 449,967 males to 440,294 females in Lower Ca and 499,067 males to 452,937 females in the more newly settled Upper Canada.

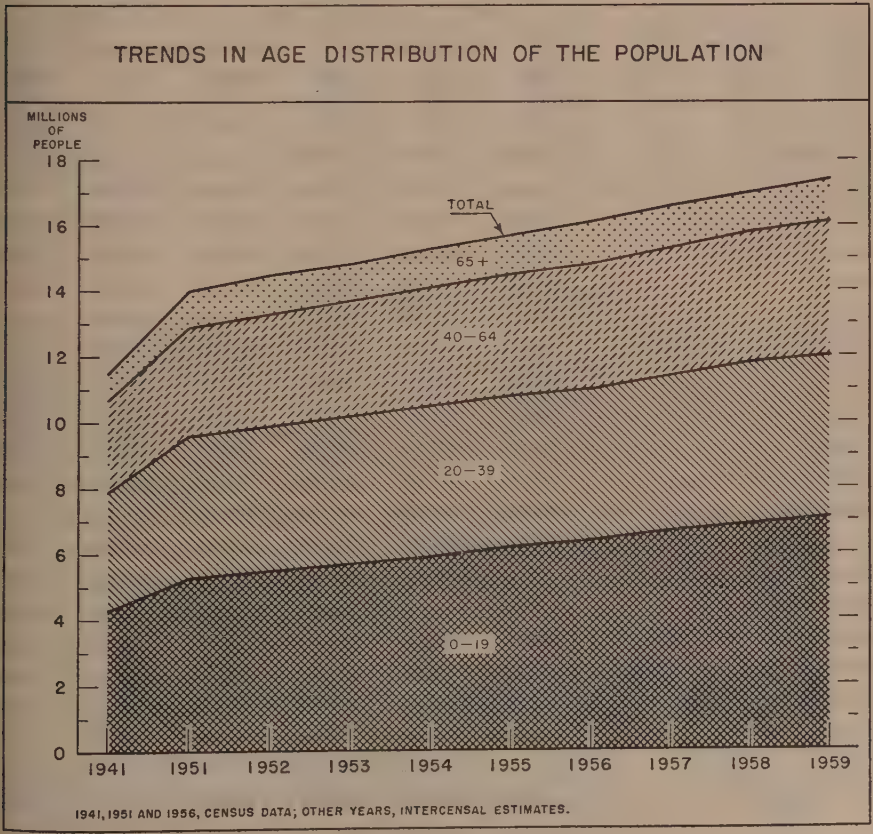
Since Confederation the newer sections of Canada—the west and the northwe have shown the greatest excess of males. From 1871 to 1941, for Canada as a w the proportion of males never dropped below 51 p.c. of the total population wherea Western Canada it varied between 53 p.c. and 59 p.c. By 1951, however, the propo of males to the total population had dropped to 50.6 p.c. for Canada as a whole an 1956 was 50.7 p.c.

9.—Sex Distribution of the Population, by Province, Census Years 1941, 1951 and 1956

NOTE.—Figures for the census years 1871–1931 are given in the 1948–49 Year Book, p. 150.

Province or Territory	1941		1951		1956	
	Male	Female	Male	Female	Male	Female
	No.	No.	No.	No.	No.	No.
Newfoundland	...	...	185,143	176,273	213,905	201,169
Prince Edward Island	49,228	45,819	50,218	48,211	50,510	48,775
Nova Scotia	296,044	281,918	324,955	317,629	353,182	341,535
New Brunswick	234,097	223,304	259,211	256,486	279,590	275,026
Quebec	1,672,982	1,658,900	2,022,127	2,033,554	2,317,677	2,310,701
Ontario	1,921,201	1,866,454	2,314,170	2,283,372	2,721,519	2,683,414
Manitoba	378,079	351,665	394,818	381,723	432,478	417,562
Saskatchewan	477,563	418,429	434,568	397,160	458,428	422,237
Alberta	426,458	369,711	492,192	447,309	585,921	537,195
British Columbia	435,031	382,830	596,961	568,249	720,516	677,948
Yukon Territory	3,153	1,761	5,457	3,639	6,924	5,266
Northwest Territories	6,700	5,328	9,053	6,951	11,229	8,084
Canada	**5,900,536**	**5,606,119**	**7,088,873**	**6,920,556**	**8,151,879**	**7,928,912**

Age.—The age distribution of a population is fundamental to most, if not all, other analyses, for the age factor influences employment, marriage, birth rates and death rates, education, immigration, criminology, and a multitude of events and activities that are of great importance in the national life.



TRENDS IN AGE DISTRIBUTION OF THE POPULATION

1941, 1951 AND 1956, CENSUS DATA; OTHER YEARS, INTERCENSAL ESTIMATES.

Recent trends in vital rates and immigration have considerably changed the composition of the population of Canada. A high birth rate together with a low de rate among children added, between 1951 and 1956, nearly 1,000,000 to the populat under 15 years of age and raised the proportion of this group to the total population fr 30.3 p.c. to 32.5 p.c. On the other hand, the relative proportion of the working- groups—persons from 15 to 64 years of age—was 2 p.c. lower at 59.8 p.c. in 1956 than 1951 when 61.9 p.c. were in this age group. Without the influx of immigrants dur the 1951-56 period, the proportion of this productive group would have been much lo since a large part of it consists of the survivors of those born in the 1930's when bi rates were at their lowest. The proportion of persons 65 years of age or over was sligh less than 8 p.c. at both census dates.

Table **10** shows the population of Canada classified by five-year age groups and for the census years 1941, 1951 and 1956. The provincial distribution by specified groups as recorded in the 1956 Census is shown in Table **11**.

10.—Male and Female Populations, by Age Group, Census Years 1941, 1951 and 1956

Age Group	1941		1951		1956	
	Male	Female	Male	Female	Male	Femal
	No.	No.	No.	No.	No.	No.
0 - 4 years	533,903	517,951	879,063	843,046	1,011,835	971
5 - 9 "	529,092	516,728	713,873	683,952	919,952	887
10 - 14 "	556,304	544,573	575,122	555,661	732,032	702
15 - 19 "	565,212	554,823	532,180	525,792	586,635	575
20 - 24 "	517,956	514,470	537,535	551,106	567,179	561
25 - 29 "	488,340	478,650	552,812	578,403	605,836	592
30 - 34 "	431,591	412,255	512,557	530,177	602,535	613
35 - 39 "	396,453	363,101	503,571	495,562	555,763	558
40 - 44 "	348,616	327,929	445,800	422,767	522,615	502
45 - 49 "	332,503	302,643	387,708	356,971	455,827	422
50 - 54 "	315,866	275,838	340,461	322,195	381,835	351
55 - 59 "	275,234	231,658	292,564	278,126	321,973	307
60 - 64 "	218,557	188,594	264,324	241,828	265,652	259
65 - 69 "	162,517	145,207	228,076	205,421	237,551	226
70 - 74 "	111,152	105,949	160,398	154,674	187,490	183
75 - 79 "	67,200	68,495	94,130	94,261	113,550	113
80 - 84 "	34,083	37,431	45,963	50,828	55,636	61
85 - 89 "	12,621	15,015	17,539	22,060	21,688	26
90 years or over	3,336	4,809	5,197	7,726	6,295	9
Totals	**5,900,536**	**5,606,119**	**7,088,873**	**6,920,556**	**8,151,879**	**7,928**

11.—Age Distribution of the Population, by Province, Census 1956

Province or Territory	0–4 Years	5–9 Years	10–14 Years	15–19 Years	20–24 Years	25–34 Years	35–44 Years	45–54 Years	55–64 Years	65–69 Years	70+ Years	All Ages
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland	63,374	59,539	45,997	35,660	30,018	52,207	47,866	32,441	23,183	8,911	15,878	415,074
Prince Edward Island	12,285	12,521	9,828	8,190	6,147	11,002	11,688	9,335	7,939	3,325	7,025	99,285
Nova Scotia	85,972	82,033	67,566	56,326	49,069	90,428	89,889	65,755	48,772	19,926	38,981	694,717
New Brunswick	74,299	73,034	57,938	47,048	36,421	69,286	66,500	49,607	37,291	15,348	27,844	554,616
Quebec	597,728	556,621	467,237	370,246	353,191	707,106	587,601	436,476	288,149	103,607	160,416	4,628,378
Ontario	628,825	563,678	425,922	346,850	365,160	856,108	751,882	581,506	430,627	167,371	287,004	5,404,933
Manitoba	100,367	91,460	72,516	60,427	57,674	121,608	115,396	87,941	66,084	29,240	47,327	850,040
Saskatchewan	109,603	97,953	79,214	68,359	58,992	120,182	114,626	87,351	65,739	30,108	48,538	880,665
Alberta	149,697	125,820	97,318	80,486	82,842	173,475	148,334	108,779	75,038	31,796	49,531	1,123,116
British Columbia	156,759	140,588	108,518	86,433	86,397	206,736	202,007	150,188	110,059	54,078	96,701	1,398,464
Yukon Territory	1,847	1,335	795	623	1,134	2,739	1,747	1,004	476	191	299	12,190
Northwest Territories	2,807	2,471	1,745	1,653	2,065	3,545	2,248	1,482	804	212	281	19,313
Canada	**1,983,563**	**1,807,053**	**1,434,594**	**1,162,301**	**1,129,110**	**2,414,422**	**2,139,784**	**1,611,865**	**1,154,161**	**464,113**	**779,825**	**16,080,791**

Subsection 5.—Marital Status

Next to the sex and age distribution of a population, that of marital status is probably most fundamental from a vital, economic and social viewpoint. The number of married females between 15 and 45 years of age is a most significant factor in the fertility of a population; if the proportion of females in this group is small, the expected proportion of births will also be small. In 1956, 64.3 p.c. of all married females were in the age group 15-44 years, as compared with 64.0 p.c. in 1951, 61.2 p.c. in 1941, and 63.5 p.c. in 1931. This trend indicates a movement towards conditions more favourable to a higher birth rate than those that existed during the period of world-wide depression.

The high birth rate of the period 1951-56, which has had such a decided effect on the increase in the total population and on its age composition, has also been an influence on the increase of 15.7 p.c. in the unmarried population. Most of this gain was in the population under 15 years of age. During the same period, the married population increased by 14.1 p.c., widowed by 10.5 p.c., and divorced by 14.9 p.c. Other striking statistics of marital status are the excess of married males over married females (largely owing to a preponderance of male immigrants whose wives had not yet joined them), the great preponderance of widows as compared to widowers, and the large and increasing number of divorced persons.

12.—Marital Status of the Population, by Age Group and Sex, Census 1956

Age Group and Sex		Single	Married	Widowed	Divorced	Tot
		No.	No.	No.	No.	No
Under 15 years	M.	2,663,819	—	—	—	2,66
	F.	2,561,391	—	—	—	2,56
	T.	5,225,210	—	—	—	5,22
15 - 19 "	M.	580,203	6,382	39	11	58
	F.	527,136	48,384	99	47	57
	T.	1,107,339	54,766	138	58	1,16
20 - 24 "	M.	409,245	157,574	186	174	56
	F.	248,766	311,640	858	667	56
	T.	658,011	469,214	1,044	841	1,12
25 - 34 "	M.	318,489	885,563	2,092	2,227	1,20
	F.	179,181	1,013,756	8,119	4,995	1,20
	T.	497,670	1,899,319	10,211	7,222	2,41
35 - 44 "	M.	140,684	926,988	6,751	3,955	1,07
	F.	110,532	914,906	28,368	7,600	1,06
	T.	251,216	1,841,894	35,119	11,555	2,13
45 - 54 "	M.	102,230	714,831	16,533	4,068	83
	F.	84,348	622,030	62,389	5,436	77
	T.	186,578	1,336,861	78,922	9,504	1,61
55 - 64 "	M.	70,075	480,954	33,951	2,645	58
	F.	57,006	392,000	115,309	2,221	56
	T.	127,081	872,954	149,260	4,866	1,15
65 - 69 "	M.	27,491	180,721	28,427	912	23
	F.	21,638	126,693	77,765	466	22
	T.	49,129	307,414	106,192	1,378	46
70 years or over	M.	43,344	233,628	106,743	944	38
	F.	40,561	130,623	223,582	400	39
	T.	83,905	364,251	330,325	1,344	77
All Ages	**M.**	**4,355,580**	**3,586,641**	**194,722**	**14,936**	**8,15**
	F.	**3,830,559**	**3,560,032**	**516,489**	**21,832**	**7,92**
	T.	**8,186,139**	**7,146,673**	**711,211**	**36,768**	**16,08**

Subsection 6.—Origins and Birthplaces

Origins.—A population composed of diverse racial stocks gives rise to politi economic and social problems quite different in nature from those of one with a sn admixture of foreign elements although, to the extent that certain racial stocks are n readily assimilated than others, the problems are mitigated. It is equally true that different educational, moral, economic, religious and political backgrounds of a peopl mixed origins lend variety and diversity to the national life.

The two basic stocks of the Canadian people are the French and the English; torically the French is much the older and, excepting at the time of the 1921 Census, always exceeded in numbers any one of the basic British stocks.

For purposes of the census, a person's origin or cultural group is traced through father. For example if a person's father is German and his mother Norwegian the ori is entered as "German". Wherever possible the origin of a person is established by ask the language spoken by the person or by his paternal ancestor when he first came Canada.

Census of 1951 data are the latest available on origins of the population.

13.—Origins of the Population, Census Years 1931, 1941 and 1951

NOTE.—Figures for census years 1871-1921 are given in the 1948-49 Year Book, p. 154.

Origin	1931	1941	1951
	No.	No.	No.
British	**5,381,071**	**5,715,904**	**6,709,685**
English	2,741,419	2,968,402	3,630,344
Irish	1,230,808	1,267,702	1,439,635
Scottish	1,346,350	1,403,974	1,547,470
Other	62,494	75,826	92,236
Other European	**4,753,242**	**5,526,964**	**6,872,889**
French	2,927,990	3,483,038	4,319,167
Austrian	48,639	37,715	32,231
Belgian	27,585	29,711	35,148
Czech and Slovak	30,401	42,912	63,959
Danish	34,118	37,439	42,671
Finnish	43,885	41,683	43,745
German	473,544	464,682	619,995
Greek	9,444	11,692	13,966
Hungarian	40,582	54,598	60,460
Icelandic	19,382	21,050	23,307
Italian	98,173	112,625	152,245
Jewish	156,726	170,241	181,670
Lithuanian	5,876	7,789	16,224
Netherlands	148,962	212,863	264,267
Norwegian	93,243	100,718	119,266
Polish	145,503	167,485	219,845
Other European—concluded			
Romanian	29,056	24,689	23,601
Russian	88,148	83,708	91,279
Swedish	81,306	85,396	97,780
Ukrainian	225,113	305,929	395,043
Yugoslavic	16,174	21,214	21,404
Other	9,392	9,787	35,616
Asiatic	**84,548**	**74,064**	**72,827**
Chinese	46,519	34,627	32,528
Japanese	23,342	23,149	21,663
Other	14,687	16,288	18,636
Other Origins	**157,925**	**189,723**	**354,028**
Native Indian and Eskimo	128,890	125,521	165,607
Negro	19,456	22,174	18,020
Other and not stated	9,579	42,028[1]	170,401
Totals	**10,376,786**	**11,506,655**	**14,009,429**

[1] Includes 35,416 half-breeds.

Countries of Birth.—The decennial census collects information on the country of birth of immigrant arrivals in Canada and province of birth of Canadian born. For persons born outside of Canada the country of birth as constituted at the date of the census is recorded. Table **14** gives the total population by countries of birth for the census years 1931, 1941 and 1951.

14.—Countries of Birth of the Population, Census Years 1931, 1941 and 1951

NOTE.—Figures for census years 1871-1921 are given in the 1948-49 Year Book, p. 158.

Country of Birth	1931	1941	1951
	No.	No.	No.
Canada	**8,069,261**	**9,487,808**	**11,949,518**
United Kingdom	1,138,942[1]	960,125[1]	912,482
Other Commonwealth	45,888	43,644	20,567
Europe	714,462	653,705	801,618
Belgium	17,033	14,773	17,251
Finland	30,354	24,387	22,035
France	16,756	13,795	15,650
Germany	39,163	28,479	42,693
Greece	5,579	5,871	8,594
Italy	42,578	40,432	57,789
Netherlands	10,736	9,923	41,457
Europe—concluded			
Union of Soviet Socialist Republics[2]	133,869	124,402	188,292
Scandinavian countries[3]	90,042	72,473	64,522
Central European countries[4]	317,350	309,360	305,192
Other Europe	11,002	9,810	38,143
Asia	60,608	44,443	37,145
United States	344,574	312,473	282,010
Other countries	3,051	3,512	6,089
Totals	**10,376,786**	**11,506,655**[5]	**14,009,429**

[1] Includes the 26 counties of Ireland in 1931 and 1941. [2] Includes Lithuania and Ukraine. [3] Includes Denmark, Iceland, Norway and Sweden. [4] Includes Austria, Czechoslovakia, Hungary, Yugoslavia, Poland and Romania. [5] Includes "birthplace not stated".

Subsection 7.—Religious Denominations

At each decennial census the numbers of persons attached to any religious denom tion, as reported by the persons enumerated, have been recorded. The distribution o principal denominations for the census years 1931, 1941 and 1951 is given in Table No later data are available.

15.—Principal Religious Denominations of the Population, Census Years 1931, 1941 and

NOTE.—More detailed figures for census years 1871-1921 are given in the 1948-49 Year Book, p. 155.

Religious Denomination	1931	1941	1951		Religious Denomination	1931	1941	1951
	No.	No.	No.	p.c.		No.	No.	No.
Adventist	16,058	18,485	21,398	0.2	Pentecostal	26,349	57,742	95,131
Anglican	1,639,075	1,754,368	2,060,720	14.7	Presbyterian	872,428	830,597	781,747
Baptist	443,944	484,465	519,585	3.7	Roman Catholic	4,102,960	4,806,431	6,069,496
Christian Science	18,499	20,261	20,795	0.1	Salvation Army	30,773	33,609	70,275
Evangelical Church	22,239	37,064	50,900	0.4				
Greek Orthodox	102,529	139,845	172,271	1.2	Ukrainian (Greek) Catholic	186,879[2]	185,948[2]	190,831
Jewish	155,766	168,585	204,836	1.5	United Church	2,021,065	2,208,658	2,867,271
Lutheran	394,920	401,836	444,923	3.2	Other	232,424	221,879	280,424
Mennonite[1]	88,837	111,554	125,938	0.9				
Mormon	22,041	25,328	32,888	0.2	**Totals**	**10,376,786**	**11,506,655**	**14,009,429**

[1] Includes "Hutterite". [2] Includes "Other Greek Catholic".

Subsection 8.—Languages and Mother Tongues

Tables showing the numbers of persons speaking one, both or neither of the offi languages of Canada and showing mother tongues of the population at the date of 1951 Census are given in the 1957-58 Year Book at pp. 138-139. Further details may found in Vol. I of the 1951 Census of Canada.

Subsection 9.—Households, Families and Dwellings

Households and Families.—Principal statistics on households and families recor at the Censuses of 1951 and 1956 are given in the 1960 Year Book at pp. 192-194; additio summary figures are given in the 1957-58 Year Book at pp. 141-143 and detailed infor tion may be found in 1956 Census Bulletins 1-13 to 1-20 inclusive (Catalogue Nos. 93- to 93-508). For estimates of family characteristics as at June 1959, see p. 169.

Dwellings.—A census of housing was not taken in 1956, so that the latest cen information on this subject is for the year 1951. Summary figures for 1941 and 1951 given in the 1960 Year Book at pp. 194-195. Sample-survey figures on household c veniences are given at p. 169 of this volume.

Subsection 10.—Blind and Deaf Population

A table showing the number of totally blind and totally deaf persons in Canada the time of the 1951 Census is given in the 1957-58 Year Book at p. 145. Further det on the blind and deaf population may be found in Vol. II of the 1951 Census of Cana No later official information will be available until the 1961 Census.

Section 2.—Intercensal Surveys

Subsection 1.—Population Estimates and Movement

Intercensal estimates of the population have many uses. They are necessary to calculation of costs of certain economic and social legislation. Business, educational a welfare organizations utilize population estimates in planning future development. Th constitute a base for vital statistics rates, per capita figures of production and trade, a other analyses. They have proved useful for estimates of labour force and other populat characteristics of data collected in sample surveys.

Estimates are constructed for the total population of Canada and for each province and become available about the date to which they apply—June 1 of each year. Population estimates by province are also available on a quarterly basis. The estimates of population begin with the preceding census counts, to which are added the births of the intervening census year or years and from which the deaths are subtracted; immigrants are added and emigrants subtracted. No precise information is available on emigration. The DBS receives yearly from the United States the number of persons who gave Canada as country of last permanent residence before entering the United States as immigrants (see Chapter on Immigration and Citizenship, Part I, Section 3) and from the United Kingdom's Board of Trade the number of emigrants from Canada taking up permanent residence in the United Kingdom. Such data, however, are not available from other countries, though the proportion of total emigrants to all other countries is small. Family allowance statistics showing the number of migrant families by provinces are used in estimating interprovincial shifts in population.

The following statement shows the data used in preparing the annual estimates for 1957-60. The next succeeding census serves as a basis for revision of the annual estimates.

Item	*Period*			
	1956-57	*1956-58*	*1956-59*	*1956-60*
	No.	No.	No.	No.
Population, Census 1956	16,081,000	16,081,000	16,081,000	16,081,000
Births[1]	451,000	932,000	1,408,000	1,881,000
Deaths[1]	132,000	270,000	408,000	547,000
Immigration	257,000	449,000	564,000	670,000
Emigration (estimated)	68,000	144,000	203,000	271,000
Population at end of period	16,589,000	17,048,000	17,442,000	17,814,000

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[1] Final figures used where available and registrations substituted for remaining period.

16.—Estimates of Population, by Province, as at June 1, Intercensal Years 1941-60

NOTE.—At every census the previous post-censal estimates, made at June 1 each year, are adjusted to the newly recorded population figures. Figures for all provinces for 1941, 1951 and 1956 and for the Prairie Provinces for 1946 are census figures. Figures for 1867–1904 will be found in the 1936 Year Book, p. 141; for 1905–30 in the 1946 edition, p. 127; and for 1931–40 in the 1952–53 edition, p. 143.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada
	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000
1941	...	**95**	**578**	**457**	**3,332**	**3,788**	**730**	**896**	**796**	**818**	**5**	**12**	**11,507**
1942	...	90	591	464	3,390	3,884	724	848	776	870	5	12	11,654
1943	...	91	606	463	3,457	3,915	723	838	785	900	5	12	11,795
1944	...	91	611	461	3,500	3,963	727	836	808	932	5	12	11,946
1945	...	92	619	467	3,560	4,000	727	833	808	949	5	12	12,072
1946	...	94	608	478	3,629	4,093	**727**	**833**	**803**	1,003	8	16	12,292
1947	...	94	615	488	3,710	4,176	739	836	825	1,044	8	16	12,551
1948	...	93	625	498	3,788	4,275	746	838	854	1,082	8	16	12,823
1949	345	94	629	508	3,882	4,378	757	832	885	1,113	8	16	13,447
1950	351	96	638	512	3,969	4,471	768	833	913	1,137	8	16	13,712
1951	**361**	**98**	**643**	**516**	**4,056**	**4,598**	**776**	**832**	**939**	**1,165**	**9**	**16**	**14,009**
1952	374	100	653	526	4,174	4,788	798	843	973	1,205	9	16	14,459
1953	383	101	663	533	4,269	4,941	809	861	1,012	1,248	9	16	14,845
1954	395	101	673	540	4,388	5,115	823	873	1,057	1,295	10	17	15,287
1955	406	100	683	547	4,517	5,266	839	878	1,091	1,342	11	18	15,698
1956	**415**	**99**	**695**	**555**	**4,628**	**5,405**	**850**	**881**	**1,123**	**1,399**	**12**	**19**	**16,081**
1957	426	99	702	565	4,758	5,622	860	879	1,160	1,487	12	19	16,589
1958	438	100	710	577	4,884	5,803	870	888	1,201	1,544	13	20	17,048
1959	449	102	716	590	4,999	5,952	885	902	1,243	1,570	13	21	17,442
1960	459	103	723	600	5,106	6,089	899	910	1,283	1,606	14	22	17,814

Table 17 shows the natural increase and the total population increase according to the census for Canada and the provinces in the periods 1931-41, 1941-51 and 1951-56. The difference between the natural increase and the total increase in population during a period represents the difference between inward and outward movements, i.e., net migration. The net migration data shown for provinces indicate the net movement of population arising partly from interchange of population between provinces and partly from persons entering and leaving the country.

The earlier movement of population on the North American Continent from east to west has not been apparent since the 1920's. Although British Columbia has continued to show population gains from migration since 1931, much of this gain has been at the expense of the Prairie Provinces. While the three Prairie Provinces lost by migration about 248,000 persons between 1931 and 1941 and somewhat more from 1941 to 1951, they gained in the period 1951-56. Manitoba lost over 109,000 population between 1931 and 1951 but only 152 persons between 1951 and 1956. Saskatchewan has been a consistent loser since 1931, losing on the average over 15,000 a year during the 1930's, almost 20,000 a year during the 1940's and just under 8,000 a year during the 1950's. Alberta lost over 40,000 persons in the decade 1931-41 but only about 7,000 in the next decade and gained close to 65,000 in the five years 1951-56. British Columbia gained through migration at the rate of about 8,000 persons a year during the 1930's, about 23,000 a year during the 1940's and about 27,000 a year in the first half of the 1950's. On an absolute basis, Ontario received more people through migration than did British Columbia but, in relation to its larger population, the gain was only about one-third as important. Most of Ontario's growth through migration was from immigration rather than interprovincial movement of population. Quebec had a slight loss between 1931 and 1951 and a considerable gain in the next five years. Nova Scotia gained population through migration during the 1930's but has been losing ever since; the Maritimes as a whole lost 138,000 persons over the quarter-century.

17.—Numerical Changes in the Population of the Provinces through Natural Increase and Migration 1931-41, 1941-51 and 1951-56

Province	Natural Increase			Population Increase according to Census			Net Migration		
	1931-41	1941-51	1951-56	1931-41	1941-51	1951-56	1931-41	1941-51	1951-56
Nfld.	...	...	52,892	...	...	53,658	...	...	+766
P.E.I.	9,681	15,802	8,920	7,009	3,382	856	−2,672	−12,420	−8,064
N.S.	57,268	103,512	63,156	65,116	64,622	52,133	+7,848	−38,890	−11,023
N.B.	59,359	99,904	59,812	49,182	58,296	38,919	−10,177	−41,608	−20,893
Que.	459,211	736,058	474,516	457,220	723,799	572,697	−1,991	−12,259	+98,181
Ont.	278,488	505,034	431,913	355,972	809,887	807,391	+77,484	+304,853	+375,478
Man.	78,083	107,510	73,651	29,605	46,797	73,499	−48,478	−60,713	−152
Sask.	131,752	135,106	85,978	−25,793	−64,264	48,937	−157,545	−199,370	−37,041
Alta.	106,405	150,303	119,307	64,564	143,332	183,615	−41,841	−6,971	+64,308
B.C.	41,100	116,527	98,006	123,598	347,349	233,254	+82,498	+230,822	+135,248
Canada[1]	**1,221,787**	**1,972,394**	**1,471,766**	**1,129,869**	**2,141,358**	**2,071,362**	**−91,918**	**+168,964**	**+599,596**

[1] Includes the Yukon and Northwest Territories.

Subsection 2.—Age and Sex Estimates

Table 18 gives estimates of the population of Canada and the provinces by age group and sex as of June 1, 1960. The method followed in preparing these estimates was much the same as that used in calculating the population estimates, described on p. 165. These estimates are subject to revision following the 1961 Census.

18.—Estimated Population classified by Age Group and Sex, by Province, as at June 1, 1960

Province or Territory	0-4 Years		5-9 Years		10-14 Years		15-19 Years	
	Males	Females	Males	Females	Males	Females	Males	Females
	'000	'000	'000	'000	'000	'000	'000	'000
Newfoundland	36.5	35.2	31.9	31.3	27.6	27.0	21.2	21.6
Prince Edward Island	6.3	6.1	6.5	6.2	5.8	5.4	4.6	4.5
Nova Scotia	46.5	43.6	43.2	40.9	38.6	36.9	31.8	30.4
New Brunswick	40.5	38.2	38.5	37.3	34.9	33.1	27.9	27.3
Quebec	336.4	322.3	306.2	296.7	275.0	263.9	221.8	216.2
Ontario	371.3	353.7	332.6	320.4	279.0	265.8	215.5	204.7
Manitoba	54.0	51.7	50.4	48.7	43.9	41.5	35.2	33.5
Saskatchewan	58.6	55.4	53.2	51.3	46.3	43.8	37.5	36.1
Alberta	90.4	85.5	77.4	73.6	63.0	59.7	48.6	46.4
British Columbia	94.7	91.6	84.3	81.2	71.7	68.4	55.6	52.8
Yukon Territory	1.3	1.1	0.9	1.0	0.5	0.5	0.4	0.3
Northwest Territories	1.9	1.8	1.5	1.4	1.0	1.1	0.9	0.9
Canada	**1,138.4**	**1,086.2**	**1,026.6**	**990.0**	**887.3**	**847.1**	**701.0**	**674.7**

Province or Territory	20-24 Years		25-34 Years		35-44 Years		45-54 Years	
	Males	Females	Males	Females	Males	Females	Males	Females
	'000	'000	'000	'000	'000	'000	'000	'000
Newfoundland	17.1	15.9	30.2	25.0	27.1	23.0	20.8	17.3
Prince Edward Island	3.6	3.5	5.4	5.2	5.6	5.8	5.3	4.7
Nova Scotia	26.6	24.1	45.1	42.3	43.7	44.4	38.4	34.5
New Brunswick	21.1	21.6	34.7	35.4	34.0	34.6	28.9	27.1
Quebec	188.4	190.5	366.3	368.0	319.3	327.6	248.4	244.7
Ontario	200.5	196.0	452.1	434.8	422.1	422.1	336.3	321.4
Manitoba	30.5	29.5	58.7	57.5	57.7	59.1	49.1	47.8
Saskatchewan	29.1	28.9	57.0	54.2	57.0	56.3	49.6	45.1
Alberta	44.8	43.2	95.6	88.8	84.6	81.9	66.0	59.2
British Columbia	52.3	47.6	118.0	104.2	110.8	111.4	92.7	85.6
Yukon Territory	0.5	0.4	1.5	1.1	1.1	1.0	0.8	0.5
Northwest Territories	1.0	0.8	2.4	1.3	1.7	1.0	1.1	0.7
Canada	**615.5**	**602.0**	**1,267.0**	**1,217.8**	**1,164.7**	**1,168.2**	**937.4**	**888.6**

Province or Territory	55-64 Years		65-69 Years		70 + Years		All Ages	
	Males	Females	Males	Females	Males	Females	Males	Females
	'000	'000	'000	'000	'000	'000	'000	'000
Newfoundland	12.8	11.8	4.5	4.5	8.3	8.4	238.0	221.0
Prince Edward Island	4.1	3.9	1.7	1.7	3.3	3.8	52.2	50.8
Nova Scotia	25.6	25.0	10.0	10.2	19.5	21.7	369.0	354.0
New Brunswick	19.8	19.3	7.7	7.8	14.6	15.7	302.6	297.4
Quebec	161.2	163.9	53.8	56.7	84.0	94.7	2,560.8	2,545.2
Ontario	234.7	238.5	82.2	91.5	140.2	173.6	3,066.5	3,022.5
Manitoba	35.5	33.7	14.5	13.5	27.1	25.9	456.6	442.4
Saskatchewan	36.1	31.7	15.4	12.5	30.9	24.0	470.7	439.3
Alberta	46.1	38.8	17.3	14.4	31.5	26.2	665.3	617.7
British Columbia	62.8	59.1	25.9	25.2	56.8	53.3	825.6	780.4
Yukon Territory	0.4	0.2	0.1	0.1	0.2	0.1	7.7	6.3
Northwest Territories	0.6	0.3	0.2	0.1	0.2	0.1	12.5	9.5
Canada	**639.7**	**626.2**	**233.3**	**238.2**	**416.6**	**447.5**	**9,027.5**	**8,786.5**

Subsection 3.—Marital Status Estimates

The estimated total population of Canada, exclusive of the Yukon and Northwest Territories, on June 1, 1959 was 17,408,000, of whom 11,600,000 or 66.6 p.c. were 15 years of age or over. The estimated total of males 15 years of age or over was 5,858,500 of whom 1,795,700 or 30.7 p.c. were single, 3,850,100 or 65.7 p.c. were married and 212,700 or 3.6 p.c. were widowed or divorced. The estimated total of females 15 years of age or over was 5,741,500, of whom 1,331,900 or 23.2 p.c. were single, 3,816,100 or 66.5 p.c. were married and 593,500 or 10.3 p.c. were widowed or divorced.

The trend towards earlier age at marriage during the war and postwar period was reflected in the sharp rise in the proportion married in the age group 15–24 years, where the percentage increased from 8.0 in 1941 to 16.0 in 1959 for males and from 21.5 to 34.2 for females.

Estimates of marital status also reflect the continuing excess of married males over married females, and the large number of widows as compared with widowers in the population, previously noted as a striking feature in the results of the 1956 Census. It is estimated that in 1959 the number of widows exceeded the number of widowers by 381,000.

19.—Estimated Population classified by Marital Status, Age Group and Sex, as at June 1, 1959

(Exclusive of the Yukon and Northwest Territories)

Age Group and Sex		Single	Married	Widowed or Divorced	Total
		No.	No.	No.	No.
0 – 14 years	M.	2,965,800	—	—	2,965,800
	F.	2,842,200	—	—	2,842,200
	T.	5,808,000	—	—	5,808,000
15 – 24 "	M.	1,069,100	203,700	400	1,273,200
	F.	813,200	423,200	500	1,236,900
	T.	1,882,300	626,900	900	2,510,100
25 – 34 "	M.	334,300	926,000	1,600	1,261,900
	F.	192,600	1,023,700	6,000	1,222,300
	T.	526,900	1,949,700	7,600	2,484,200
35 – 44 "	M.	144,600	988,800	11,100	1,144,500
	F.	110,000	1,000,800	33,500	1,144,300
	T.	254,600	1,989,600	44,600	2,288,800
45 – 54 "	M.	103,800	788,200	20,200	912,200
	F.	89,600	693,500	75,900	859,000
	T.	193,400	1,481,700	96,100	1,771,200
55 – 64 "	M.	72,700	515,500	34,900	623,100
	F.	61,200	396,300	151,700	609,200
	T.	133,900	911,800	186,600	1,232,300
65 years or over	M.	71,200	427,900	144,500	643,600
	F.	65,300	278,600	325,900	669,800
	T.	136,500	706,500	470,400	1,313,400
All Ages	**M.**	**4,761,500**	**3,850,100**	**212,700**	**8,824,300**
	F.	**4,174,100**	**3,816,100**	**593,500**	**8,583,700**
	T.	**8,935,600**	**7,666,200**	**806,200**	**17,408,000**

Subsection 4.—Dwelling and Family Estimates

Annually since 1953 a sample survey on dwellings and household facilities and equipment has been conducted in conjunction with the monthly labour force survey. More than 35,000 households chosen by random sampling methods in about 160 different areas are interviewed. Results of the 1960 survey are presented in Table **20**.

20.—Dwelling Characteristics, Sample Survey, May 1960

Characteristic	No.	P.C. of Total	Characteristic	No.	P.C. of Total
Occupied Dwellings[1]..............'000	4,404	100.0	Dwellings with—concluded		
Single detached.................. "	2,906	66.0	Running water.................'000	3,940	89.5
Apartments, flats................ "	1,214	27.6	Flush toilet.................... "	3,737	84.9
Single attached.................. "	284	6.4	Bath or shower[2]................ "	3,375	76.6
Owned.......................... "	2,978	67.6	Electric or gas range........... "	3,408	77.4
Rented......................... "	1,426	32.4	Electric or gas refrigeration.... "	4,010	91.1
			Electric washing machine...... "	3,822	86.8
Rooms per dwelling.............No.	5.4	...	Electric vacuum cleaner........ "	2,974	67.5
Persons per dwelling............ "	3.9	...	Telephone...................... "	3,667	83.3
			Radio.......................... "	4,236	96.2
Dwellings with—			Television set.................. "	3,550	80.6
Furnace heating.................'000	2,921	66.3	Passenger automobile.......... "	2,931	66.6

[1] Excludes households in the Yukon and Northwest Territories; households of Indians on reserves; such collective-type households as those living in hotels, large lodging houses, institutions, clubs and camps. [2] For exclusive use of household.

Estimates of the number of families in Canada and the provinces are also prepared annually. The estimates for 1959 were based on family data secured from the May 1959 sample survey of the labour force and population estimates for 1959.

The estimated number of families in Canada in June 1959 was 4,038,000, an increase of 332,000 or 9.0 p.c. since the 1956 Census. The average number of persons per family was 3.9 compared with 3.8 in 1956 and 3.7 in 1951. The number of children in families increased by 930,000 in the years between June 1956 and June 1959 and showed an average annual increase of 243,000 since June 1951. It is interesting to note that since 1951 there has been an increase in the percentage of families having three children or more at home and a decrease in the percentage of families having fewer than three children, or no children.

21.—Estimates of Family Characteristics, June 1959 compared with Censuses of 1951 and 1956

(Exclusive of the Yukon and Northwest Territories)

Characteristic	Census 1951	Census 1956	Estimate 1959	Increase 1951-56	Increase 1956-59
Population.................................No.	13,984,329	16,049,288	17,408,000	2,064,959	1,358,712
Families.................................. "	3,282,445	3,705,607	4,038,000	423,162	332,393
Persons per family........................ "	3.7	3.8	3.9	0.1	0.1
Children in families...................... "	5,534,372	6,549,733	7,480,000	1,015,361	930,267
Families with—					
No children at home...................p.c.	32.3	31.3	29.4	...	...
1—2 children " .... "	43.3	..	41.5	...	...
3—4 children " .... "	16.7	..	20.6	...	...
5 or more children " .... "	7.7	..	8.5	...	...

Section 3.—The Native Peoples of Canada

Two small segments of the population are given special attention because they, in point of time and origin, are the most truly Canadian of the country's citizens and because they, of all the people in the land, are the least able to cope with the rapid changes taking place in their way of life.

The Indians.*—Approximately one of every hundred Canadians is registered as an Indian by the Department of Citizenship and Immigration. This number includes all persons with a paternal ancestor of Indian race who have chosen to remain under Indian legislation. In the aggregate, the Indians are grouped into 562 bands and occupy or have access to 2,217 reserves having a total area of 5,899,892 acres.

About 26 p.c. of the Indians reside away from reserves, including those in the Northwest Territories and the Yukon for whom reserves have not been set aside. Many Indians, both on and off reserves, have specialized in the various professions, trades and agricultural pursuits. Others have fitted into the economy of the areas in which they live in a wide variety of occupations. More than 230 Indians are employed by the Indian Affairs Branch of the Department of Citizenship and Immigration, 116 of whom are teachers. In the northern and other outlying areas, hunting, fishing and trapping remain an important means of livelihood for Indians.

Subject to special provisions in the Indian Act, all laws of general application are applicable to Indians. Indians are liable for taxation of property held off a reserve as well as any income they earn off a reserve. They may vote in federal elections on the same basis as other citizens and in provincial elections where the electoral laws of the provinces permit. Indians are free to enter into contractual obligations and may sue and be sued. However, their real and personal property situated on a reserve is exempt from seizure except on suit by another Indian.

22.—Indian Land in Reserves and Number of Bands, by Province, as at Mar. 31, 1960

Province	Reserves		Bands	Province or Territory	Reserves		Bands
	No.	Area			No.	Area	
		acres	No.			acres	No.
Prince Edward Island...	4	2,741	1	Saskatchewan...........	120	1,205,538	67
Nova Scotia............	43	25,352	11	Alberta................	87	1,545,986	41
New Brunswick..........	23	37,566	15	British Columbia........	1,619	818,196	195
Quebec.................	26	179,016	41	Yukon Territory.........	15	3,535	15
Ontario................	163	1,555,797	111	Northwest Territories...	10	1,924	15
Manitoba...............	107	524,241	50				
				Canada..........	**2,217**	**5,899,892**	**562**

A Departmental census of Indian population is taken every five years; the numbers recorded at the censuses of 1949, 1954 and 1959 are given in Table **23**.

23.—Indian Population, by Province, Departmental Censuses 1949, 1954 and 1959

Province	1949	1954	1959	Province or Territory	1949	1954	1959
	No.	No.	No.		No.	No.	No.
Prince Edward Island........	273	272	341	Saskatchewan...............	16,308	18,750	23,280
Nova Scotia................	2,641	3,002	3,561	Alberta....................	13,805	15,715	19,287
New Brunswick..............	2,139	2,629	3,183	British Columbia............	27,936	31,086	36,229
Quebec.....................	15,970	17,574	20,453	Yukon Territory.............	1,443	1,568	1,868
Ontario....................	34,571	37,255	42,668	Northwest Territories.......	3,772	4,023	4,598
Manitoba...................	17,549	19,684	23,658				
				Canada.............	**136,407**	**151,558**	**179,126**

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* Prepared in the Information Division, Department of Citizenship and Immigration, Ottawa.

The 1959 Indian population in each province is classified by age group and sex in Table 24. The rapid growth of that population in recent years is indicated by the fact that in 1959 more than 56 p.c. of the Indians were under 21 years of age compared with 42 p.c. of the population of Canada as a whole. Religious denominations of the Indian population are given in Table **25**.

24.—Indian Population classified by Age Group and Sex, by Province, Departmental Census 1959

Province or Territory	0-5 Years		6-15 Years		16-20 Years		21-64 Years	
	Males	Females	Males	Females	Males	Females	Males	Females
	No.	No.	No.	No.	No.	No.	No.	No.
Prince Edward Island.....	36	28	32	36	23	17	80	66
Nova Scotia..............	329	291	462	460	177	162	763	645
New Brunswick...........	363	335	414	404	144	146	673	549
Quebec....................	1,805	1,851	2,314	2,293	918	945	4,764	4,280
Ontario...................	4,057	3,992	5,224	5,108	1,989	2,049	9,220	8,147
Manitoba..................	2,765	2,709	3,195	3,121	1,148	1,127	4,633	3,916
Saskatchewan.............	2,888	2,867	3,063	3,080	1,071	1,098	4,334	3,956
Alberta...................	2,386	2,313	2,563	2,661	901	980	3,537	3,110
British Columbia.........	3,955	3,994	4,866	4,740	1,808	1,840	7,235	6,214
Yukon Territory..........	215	191	215	258	83	89	380	332
Northwest Territories.....	428	485	566	527	203	223	1,002	869
Totals...............	**19,227**	**19,056**	**22,914**	**22,688**	**8,465**	**8,676**	**36,621**	**32,084**

Province or Territory	65-69 Years		70 + Years		Not Stated		All Ages	
	Males	Females	Males	Females	Males	Females	Males	Females
	No.	No.	No.	No.	No.	No.	No.	No.
Prince Edward Island.....	2	2	5	5	2	7	180	161
Nova Scotia..............	34	23	57	45	47	66	1,869	1,692
New Brunswick...........	23	17	41	33	16	25	1,674	1,509
Quebec....................	242	159	354	345	47	136	10,444	10,009
Ontario...................	403	343	788	699	213	436	21,894	20,774
Manitoba..................	179	149	317	320	15	64	12,252	11,406
Saskatchewan.............	194	136	290	254	6	43	11,846	11,434
Alberta...................	170	90	243	216	43	74	9,843	9,444
British Columbia.........	293	226	542	460	10	46	18,709	17,520
Yukon Territory..........	8	21	37	37	—	2	938	930
Northwest Territories.....	57	36	77	86	16	23	2,349	2,249
Totals...............	**1,605**	**1,202**	**2,751**	**2,500**	**415**	**922**	**91,998**	**87,128**

25.—Religious Denominations of the Indian Population, by Province, Departmental Census 1959

Province or Territory	Anglican	Baptist	United Church	Pres-byterian	Roman Catholic	Other Christian Beliefs	Aboriginal	Not Stated	All Denom-inations
	No.	No.	No.	No.	No.	No.	No.	No.	No.
P.E.I..........	—	—	—	—	340	—	—	1	341
N.S............	—	—	6	—	3,531	2	—	22	3,561
N.B.....	—	—	1	—	3,022	—	—	160	3,183
Que...........	3,952	5	784	2	14,827	219	215	449	20,453
Ont...........	12,232	2,865	6,836	892	14,734	674	2,501	1,934	42,668
Man...........	6,999	—	5,899	1,025	9,126	306	82	221	23,658
Sask..........	6,915	54	2,015	366	12,462	59	1,170	239	23,280
Alta...........	2,436	143	2,127	26	13,853	437	58	207	19,287
B.C............	6,900	—	6,852	6	21,077	1,117	—	277	36,229
Yukon..........	1,331	93	—	—	438	—	—	6	1,868
N.W.T.........	778	—	—	1	3,553	—	—	266	4,598
Totals........	**41,543**	**3,160**	**24,520**	**2,318**	**96,963**	**2,814**	**4,026**	**3,782**	**179,126**

Administration.—Pursuant to the British North America Act, the administration of Indian Affairs, which had been under the management of several provinces, came under the jurisdiction of the Government of Canada. Since January 1950, Indian Affairs have been the responsibility of a Branch of the Department of Citizenship and Immigration.

The Indian Affairs Branch is composed of a headquarters staff at Ottawa, nine regional offices, and 89 field agencies. Specialists in such matters as education, economic development, resource management, social welfare, and engineering and construction are attached to headquarters and regional staffs. Liaison is maintained with the Indian and Northern Health Services of the Department of National Health and Welfare, the federal agency concerned with the medical care of Indians.

It is the primary function of the Indian Affairs Branch to administer the affairs of Indians in a manner that will enable them to participate fully in the social and economic life of the country. To this end, the Branch has brought into effect a wide range of programs in the fields of education, economic development, social welfare and community development. Underlying administrative duties of the Branch include the management of Indian reserves and surrendered lands, the administration of band funds, estates management, enfranchisement of Indians, and the administration of treaty obligations.

Education.—More than 40,000 Indian students are enrolled in schools throughout the country. Nearly one-quarter of these attend provincial and private schools, the cost of tuition being assumed by the Federal Government. As a further encouragement to the integration of Indian children in non-Indian schools, grants are made toward the cost of any new or supplementary construction required by their admission.

There are four types of Indian schools, all operated at the cost of the Government. On most reserves, day schools have been established to provide education for children who live at home. Residential schools are operated to care for orphaned children, children from broken homes, and for those who, because of isolation or other reasons, are unable to attend day schools. Seasonal schools have been established for the children of migratory families, particularly in the Far North. The fourth type of school is designed to meet the needs of children confined to hospital.

All standard classroom supplies and authorized textbooks are provided in Indian schools. Financial assistance for students attending non-Indian schools varies from payment of tuition fees for some, to full maintenance for others. Promising senior students are awarded scholarships to attend university or vocational school and scholarships are given to those who show promise in the arts.

26.—Enrolment of Indian Pupils, classified by Type of School and by Grade, Academic Year 1959-60

Classification	Grade				Technical	Professional	Total
	Kindergarten	1-6	7-8	9-13			
	No.	No.	No.	No.	No.	No.	No.
Day school	1,780	15,669	1,660	65	—	—	19,174[1]
Residential school boarders attending classes at residential schools	475	7,024	1,107	503	—	—	9,109
Day pupils attending classes at residential schools	158	1,363	166	14	—	—	1,701
Seasonal school	253	520	—	—	—	—	773
Hospital school	21	306	64	10	—	—	401
Provincial, private or territorial school	—	5,945	1,370	1,689	354	121	9,479[2]
Totals	**2,687**	**30,827**	**4,367**	**2,281**	**354**	**121**	**40,637**

[1] Includes 362 residential school boarders attending Indian day schools.

[2] Includes 902 residential school boarders attending provincial and private schools.

27.—Indian Pupils Attending Provincial, Private or Territorial Schools, classified by Grade or Type of Training, by Province, Academic Year 1959-60

Grade or Type of Training	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	N.W.T.	Yukon	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Grade—												
1	1	37	1	38	217	76	158	74	457	348	64	1,471
2	1	16	3	48	166	45	107	76	370	220	33	1,085
3	—	28	5	70	162	51	88	95	264	126	32	921
4	1	15	10	61	139	42	72	73	300	109	29	851
5	1	20	24	95	177	49	45	74	303	80	22	890
6	—	10	13	65	174	48	50	61	237	52	17	727
7	1	12	18	56	131	30	28	74	356	46	35	787
8	—	14	8	86	106	29	19	52	238	15	16	583
9	2	27	16	54	262	25	76	72	213	6	19	772
10	—	16	11	40	138	21	22	35	160	3	6	452
11	—	13	5	10	88	20	27	30	99	4	5	301
12	—	4	2	1	47	7	11	19	51	1	4	147
13	—	—	—	—	12	—	—	—	5	—	—	17
University—												
1st year	1	3	1	5	3	—	3	1	1	—	—	18
2nd year	1	1	—	5	2	—	1	—	2	—	—	12
3rd year	—	1	—	1	3	—	—	—	—	—	—	5
4th year	—	1	—	—	—	1	1	1	—	—	—	4
Law	—	—	—	—	—	—	—	—	1	—	—	1
Medical	—	—	—	1	—	—	—	—	—	—	—	1
Teacher training	—	2	1	6	13	3	3	—	5	—	—	33
Nurse training	—	2	—	2	10	1	7	1	2	—	—	25
Commercial	1	1	1	20	32	9	12	8	5	—	1	90
Trades	—	17	3	44	47	15	10	3	19	31	—	189
Nurses' aide	—	—	1	—	5	—	1	5	10	—	—	22
Blind and deaf	—	1	—	4	5	4	—	—	5	—	—	19
Other	—	—	—	—	42	4	2	2	6	—	—	56
Totals	**10**	**241**	**123**	**712**	**1,981**	**480**	**743**	**756**	**3,109**	**1,041**	**283**	**9,479**

Economic Development.—With a view to providing for all Indians the opportunity to earn satisfactory incomes, the Indian Affairs Branch has instituted a number of programs in the field of economic development. These programs give special attention to the placement of Indians in employment; the promotion of agriculture and stock-raising on reserves; the fostering of Indian enterprise and the provision of loans; home industries and handicrafts; the management of fur, fish and wildlife resources; and assistance to Indians in developing other resources on or within access of the reserves.

The Employment Placement Program has as its objective the development of job opportunities for Indians and the promotion of their employment in a wider range of occupations. Indian Affairs Branch Placement Officers are attached to Branch Regional Offices at Vancouver, Edmonton, Saskatoon, Winnipeg, North Bay, Toronto, Quebec, Amherst, Fort Smith and Whitehorse. In addition, the facilities of the National Employment Service are utilized to the greatest possible extent in placing Indians in both urban and rural employment.

The rehabilitation and management of fur resources, undertaken in co-operation with various provinces, is being continued. Under the program, beaver production in Saskatchewan, Manitoba, Ontario and Quebec has risen steadily; during the 1959-60 season, 247,196 beaver pelts valued at $2,674,483 were taken. Total Indian income from trapping in that season was approximately $5,500,000.

Commercial fishing by inland Indians is growing in economic importance. In 1959, the lake catch was valued at nearly $1,000,000. Coastal fisheries brought in approximately $5,000,000 and a further $1,000,000 was earned by Indians in the packing, canning and processing of fish products.

A special $1,000,000 revolving fund has been set aside by the Government as a source of credit for Indians who live on reserves. During the year ended Mar. 31, 1960, 100 loans totalling $109,230 were approved. Most of these loans were for agricultural purposes, including the purchase of machinery and cattle.

Welfare.—A public assistance program is provided by the Indian Affairs Branch for Indians who are unable, for various reasons, to maintain themselves and their families. In the field of rehabilitation, handicapped Indians are helped, through training and selected placement, to the fullest utilization of their abilities. Care of neglected children rests for the most part with the Branch but, increasingly, the co-operation and assistance of provincial accredited child-caring agencies are being employed. Housing is another important item of Indian welfare services—over 10,000 houses were built and thousands of others repaired during the past decade. In recent years, Indian householders have been meeting approximately one-half the cost of new construction and renovation.

28.—Housing on Indian Reserves, by Region, Year Ended Mar. 31, 1960

Region	Houses			Expenditures				
	Started Before, Completed during Year	Started and Completed during Year	Started during Year but Not Completed	From Welfare Appropriation	From Band Funds	From VLA Grant	Personal Contributions	Total
	No.	No.	No.	$	$	$	$	$
Maritime Provinces	—	32	4	95,059	—	4,390	9,750	109,199
Quebec	59	61	18	275,145	—	656	44,725	320,526
Ontario—								
Southern	33	41	28	80,144	29,180	3,266	55,441	168,031
Northern	15	121	25	224,166	80,332	5,670	52,740	362,908
Manitoba	59	154	22	255,464	42,390	—	104,895	402,749
Saskatchewan	22	244	11	330,575	122,462	1,948	71,338	526,324
Alberta and Northwest Territories	76	281	65	337,666	644,553	—	53,460	1,035,679
British Columbia and Yukon	82	185	50	397,678	147,584	6,439	241,768	793,468
Canada	**346**	**1,119**	**223**	**1,995,897**	**1,066,501**	**22,369**	**634,117**	**3,718,884**

Every effort is made to reach agreement with provincial governments which will make possible the application of normal provincial welfare services and benefits on reserves. Several bands in Ontario already participate in the Ontario General Welfare Assistance Act. Throughout Canada, Indians are paid family allowances, old age security, old age assistance, blind persons' allowances and disabled persons' allowances, and in the Provinces of Ontario and Quebec, mothers' allowances are available to needy Indian mothers.

Community Development.—Community development on Indian reserves is making progress at an ever-increasing rate. Leadership training courses are conducted under Indian Affairs Branch auspices to help Indians identify and understand community problems and to become familiar with accepted methods of community organization. Indian women are encouraged to form homemakers' clubs patterned after municipal women's institutes and the Branch assists the clubs through counselling and material aid. The Branch also encourages Indian band councils to exercise to the fullest extent their powers and duties granted under the Indian Act.

Through the co-operation and assistance of university extension departments, provincial education authorities and various health and welfare organizations, the Branch-sponsored programs for community development have been greatly expanded in recent years. The Extension Department of the St. Francis Xavier University has directed an intensive program in community action by Indians on the Sydney and other reserves in Nova Scotia. Leadership training courses for Indians have been held annually under the auspices of the Welfare Council of Greater Winnipeg. Universities are assisting in planning and developing programs for Indian groups in Alberta, British Columbia and Quebec. In Ontario, the Community Programs Branch of the Provincial Department of Education has planned and organized a special leadership training course for Indian band chiefs and councillors.

The Eskimos.*—For most of Canada's 11,500 Eskimos, each year brings ever-increasing changes in the familiar pattern of the traditional way of life. Scattered throughout the northern mainland and the Arctic Islands, they are facing the impact of southern culture and southern economic activity and have begun to emerge as leaders in totally new fields. Many have joined the ranks of the growing body of skilled Eskimo tradesmen—in the nickel mine at Rankin Inlet, where more than 50 are employed; on the Distant Early Warning Line, where a hundred or so play a part in the defence of North America; and in the service of mining and oil exploration companies probing the exciting possibilities of the North. In 1960, the first Eskimo was ordained a Minister in the Anglican Church; another became a senior officer in a large centre for the rehabilitation of disabled Eskimos; and another became an announcer in the new CBC Northern Service. In dozens of communities, Eskimos are serving as diesel mechanics, interpreters, clerks, hospital aides, electricians, carpenters and power plant operators. At the same time, about three-quarters of the Eskimo population live outside the main centres of economic and government activity and continue to live as their fathers lived—by hunting, trapping and fishing.

Whatever the activities, they are not without problems for the Eskimo people. Those in wage employment face the difficulties of social adjustment in a new and different way of life. Those on the land face the fundamental problems of obtaining adequate food and shelter. The Government of Canada, through the Department of Northern Affairs and National Resources and other agencies, is endeavouring to ensure that the citizens of the North receive not only the same social benefits as southern Canadians in the form of family allowances, old age assistance, and disabled persons' allowances, but also such additional help as may be required to enable them to maintain a leading role in the years of adjustment. Teachers, northern service officers, social workers, technical officers and a variety of other government agents engaged in the administration of the northland pool their knowledge and their skills to this end. Schools have been established in most Arctic communities and hostels have been built to accommodate children whose parents live away from the communities, so that in 1961 some 1,800 Eskimo children—approximately half the total of school age—were in regular attendance. Vocational training and adult education courses are provided to enable wage-employed Eskimos to learn the skills necessary in their new jobs.

Welfare services include the operation of three centres for the rehabilitation of Eskimos disabled by tuberculosis, by other diseases or by accident, where those unable to return to the old way of life may learn new kinds of work and become self-sufficient. Welfare officers employed throughout the Arctic are few in number but they render a wide variety of case-work services to the Eskimo population.

Permanent housing of a kind within the reach of all to buy and heat is a necessity for both the wage-employed Eskimo and the Eskimo still living on the land. More than 200 units of a small dwelling designed in 1958 have been shipped to a number of Arctic communities. Many of them have been erected by the purchasers themselves. Some of those in wage employment have already completed their payments, while many of the buyers living on the land will take advantage of the full ten-year amortization plan.

For the people living on the land, education for their children offers the brightest hope for the future, but new uses for existing resources are contributing to a more comfortable life today. Co-operative fisheries and handicraft production shops are bringing much-needed cash to the small communities. Carvings and stone-cut prints have reached a high standard of excellence and have brought Canadian Eskimos world-wide acclaim in the artistic field as well as a valuable economic return. Where country food is plentiful, community freezers are now used to store game and fish taken during the summer months for the winters ahead. With the better use of local food and with a higher income for many people, the threats of privation and malnutrition are dwindling.

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* Prepared in the Information Section, Department of Northern Affairs and National Resources, Ottawa. A more detailed article appears in the 1960 Year Book, pp. 205–210.

The Eskimo people have survived for thousands of years on comparatively meagre resources in a harsh land and have become a hardy, adaptable and surprisingly cheerful group. They are taking the southern invasion in their stride and using their adaptability to show that they can take their place in the new North alongside the best professional workers, technologists and tradesmen that southern Canada can produce. Of all the wealth the North may yield, none will be more important to the future of Canada than its first residents, the Eskimos.

Section 4.—Statistics of World Population

World population figures given in Table 29 are from the United Nations *Population and Vital Statistics Report* for October 1960 and, except as otherwise noted, are mid-year estimates for 1959. The area figures are from the United Nations *Statistical Yearbook, 1959*.

Estimated Population of the World by Continents.—The statement below presents adjusted estimates of the 1959 mid-year population of the world by continental divisions. These aggregates do not coincide exactly with the sum of the figures for individual countries because they include, in addition, adjustments for over- and under-enumeration, over-estimation, categories of population not regularly included in the official figures, and approximations for those countries that have not provided official 1959 data. The estimates are as follows:—

Continental Division	*Number*
Africa	236,000,000
North America	261,000,000
South America	137,000,000
Asia (includes Syria and Asiatic Turkey)	1,622,000,000
Europe (includes European Turkey)	423,000,000
Oceania (includes Hawaii)	16,100,000
Union of Soviet Socialist Republics (Asia and Europe)	210,500,000
WORLD TOTAL	2,905,600,000
Commonwealth countries (at June 1, 1961)	680,657,000 (1959)

29.—Areas and Populations of the Countries or Areas of the World, 1959

NOTE.—Status of independency or dependency is as at June 1, 1961. Members of the Commonwealth and the Territories for which the United Kingdom or Commonwealth members are responsible (at June 1, 1961) are indicated with an asterisk (*).

Continent and Country	Area	Population
	sq. miles	'000
Africa		
INDEPENDENT STATES		
Cameroun (formerly Cameroons under Fr. Adm.)	166,796	3,230
Central African Republic	238,224	1,190
Chad	495,754	2,630
Congo—(Brazzaville) (formerly Republic of the Congo)	132,047	810
Congo—(Leopoldville) (formerly Belgian Congo)	905,381	13,840
Dahomey	44,696	1,750
Ethiopia	457,267	21,800
Gabon	103,089	420
*Ghana	91,843	6,691[1]
Guinea	94,926	2,727
Ivory Coast	124,503	3,120
Liberia	43,000	1,250[1]
Libya	679,360	1,172
Malagasy Republic	227,800	5,280
Mali (formerly Sudanese Republic)	464,874	4,330
Mauritania	419,230	730
Morocco	171,305	10,550
Niger	458,995	2,555

For footnotes, see end of table, p. 181.

29.—Areas and Populations of the Countries or Areas of the World, 1959—continued

Continent and Country	Area	Population
	sq. miles	'000
Africa—concluded		
*Nigeria, Federation of	339,169	33,663
Eastern Region	*29,484*	*8,074*
Lagos (Federal Capital)	*27*	*350*
Northern Region	*264,282*	*18,378*
Western Region	*45,376*	*6,861*
Senegal	76,124	2,570
Somalia (formerly British Somaliland and Somaliland under Ital. Adm.)	246,202	1,990
Sudan	967,501	11,459[2]
Togo (formerly Togoland under Fr. Adm.)	22,008	1,670
Tunisia	48,332	3,925
Union of South Africa[3]	472,359	14,673
United Arab Republic	457,329	29,904[4]
Egypt	*386,101*	*25,365*
Syria	*71,228*	*4,539*
Upper Volta	105,839	4,030
TERRITORIES AND DEPENDENCIES		
France—		
Algeria	919,593	10,930
French Somaliland	8,494	70
Comoro Islands	838	185
French Southern and Antarctic Territories	2,918	..
Réunion	969	324
Portugal—		
Angola	481,352	4,550
Cape Verde Islands	1,557	195
Mozambique	302,329	6,310
Portuguese Guinea	13,948	565
São Tomé and Principe	372	64
Spain—		
Ifni	579	53
Possessions in North Africa	82	145
Spanish Equatorial Region (formerly Spanish Guinea)	10,831	216
Spanish Sahara	102,703	25
United Kingdom—		
*Basutoland	11,716	674
*Bechuanaland	275,000	337[5]
*Gambia	4,003	290
*Kenya	224,960	6,450
*Mauritius, excl. dependencies	720	621
Rodrigues	42	17
Other dependencies	47	2
*Rhodesia and Nyasaland, Federation of	483,829	7,990
Northern Rhodesia	*288,130*	*2,360*
Nyasaland	*45,366*	*2,770*
Southern Rhodesia	*150,333*	*2,860*
*St. Helena, excl. dependencies	47	5
Ascension, Tristan da Cunha and other dependencies	115	..
*Seychelles	156	43
*Sierra Leone	27,925	2,400
*Swaziland	6,704	275
*Uganda	93,981	6,517
*Zanzibar and Pemba	1,020	304
TRUST TERRITORIES		
*Cameroons (Br. Adm.)	34,081	1,621
Ruanda-Urundi (Belg. Adm.)	20,916	4,780
*Tanganyika (Br. Adm.)	361,800	9,076
FORMER MANDATED TERRITORY (Union of South Africa)		
*South West Africa[6]	318,099	554

For footnotes, see end of table, p. 181.

29.—Areas and Populations of the Countries or Areas of the World, 1959—continued

Continent and Country	Area	Population
	sq. miles	'000
America, North		
INDEPENDENT STATES		
*Canada	3,851,809	17,814[1]
Costa Rica	19,653	1,126
Cuba	44,218	6,743[1]
Dominican Republic	18,816	2,894
El Salvador	7,722	2,520
Guatemala	42,042	3,652
Haiti	10,714	3,464
Honduras	43,277	1,887
Mexico	760,337	33,304
Nicaragua	57,143	1,424
Panama	28,753	1,024
United States of America	3,615,213	177,700[7]
TERRITORIES AND DEPENDENCIES		
Denmark—		
Greenland	840,001	30
France—		
Guadeloupe and dependencies	687	264
Martinique	425	271
St. Pierre and Miquelon	93	5
Netherlands—		
Netherlands Antilles	371	195
United Kingdom—		
*Bahama Islands	4,400	103
*Bermuda	20	44
*British Honduras	8,866	87
*Virgin Islands (U.K.)	67	8
West Indies, Federation of—		
*Antigua	171	58
*Barbados	166	238
*Cayman Islands	100	9
*Dominica	305	66
*Grenada	133	93
*Jamaica	4,411	1,671
*Montserrat	32	14
*St. Kitts-Nevis and Anguilla	153	60
*St. Lucia	238	93
*St. Vincent	150	83
*Trinidad and Tobago	1,980	817
*Turks and Caicos Islands	166	7
United States—		
Canal Zone	553	42[8]
Puerto Rico	3,435	2,347[8]
Virgin Islands (U.S.)	133	30[8]
America, South		
INDEPENDENT STATES		
Argentina	1,072,748	20,614
Bolivia	424,163	3,462[1]
Brazil	3,287,204	64,216[9]
Chile	286,397	7,465
Colombia	439,520	13,824
Ecuador	104,506	4,169[10]
Paraguay	157,047	1,718
Peru	496,223	10,524[11]
Uruguay	72,172	2,803[1]
Venezuela	352,143	6,512[12]

For footnotes, see end of table, p. 181.

29.—Areas and Populations of the Countries or Areas of the World, 1959—continued

Continent and Country	Area	Population
	sq. miles	'000
America, South—concluded		
TERRITORIES AND DEPENDENCIES		
France—		
French Guiana	35,135	31
Netherlands—		
Surinam	55,144	255[13]
United Kingdom—		
*British Guiana	83,000	549
*Falkland Islands, excl. dependencies	4,618	2
Asia		
INDEPENDENT STATES		
Afghanistan	250,966	13,150
Bahrain	231	143[1]
*Bhutan	19,305	660
Burma	261,757	20,457
Cambodia	66,607	4,845[1]
*Ceylon	25,332	9,612
China (mainland)	3,768,736	669,000[1]
China (Taiwan and Pescadores)	13,885	10,232[14]
*Cyprus	3,572	558
*India, incl. Kashmir-Jammu	1,259,992	402,600
Indonesia	575,894	89,600
Iran	636,294	20,149[15]
Iraq	171,600	6,952
Israel	7,992	2,061
Japan	142,726	92,740
Jordan	37,301	1,636
Korea	85,286	31,948
North Korea	*47,862*	*8,100*
Republic of Korea	*37,424*	*23,848*
Kuwait	6,000	219
Laos	91,429	1,760
Lebanon	4,015	1,550[1]
*Malaya, Federation of	50,700	6,698
*Maldive Islands	115	89
Mongolian People's Republic	591,121	1,057
Muscat and Oman	82,000	550
Nepal	54,362	9,044
*Pakistan	364,797	86,823
Philippines	115,707	27,473[1]
Qatar	8,500	40
Saudi Arabia	617,762	6,036[1]
*Sikkim	2,744	150
Thailand	198,456	21,881
Trucial Oman	32,278	86
Turkey (Asia and Europe)	301,381	26,881[1]
Viet Nam—		
North Viet Nam	59,934	15,280
Republic of Viet Nam	65,948	13,790
Yemen	75,290	4,500[1]
TERRITORIES AND DEPENDENCIES		
Netherlands—		
Netherlands New Guinea	160,618	700
Portugal—		
Macau	6	215
Portuguese India	1,619	649
Portuguese Timor	5,763	496
United Kingdom—		
Aden—		
*Aden Colony	75	151
*Aden Protectorate	112,000	650
*Brunei	2,226	83
*Hong Kong	391	2,857
*North Borneo	29,387	419
*Sarawak	47,500	688
*Singapore	224	1,580

For footnotes, see end of table, p. 181.

29.—Areas and Populations of the Countries or Areas of the World, 1959—continued

Continent and Country	Area	Population
	sq. miles	'000
Asia—concluded		
FORMER MANDATED TERRITORY (United Kingdom)		
Palestine	10,459	1,912[1]
Gaza Strip	78	350
MILITARY GOVERNMENT (United States)		
Bonin Islands	40	[16]
Ryukyu Islands	848	855
Europe		
INDEPENDENT STATES		
Albania	11,100	1,556
Andorra	175	7
Austria	32,374	7,049[2]
Belgium	11,779	9,104[2]
Bulgaria	42,729	7,798
Czechoslovakia	49,366	13,559
Denmark	16,619	4,547[2]
Finland	130,120	4,416
France (Metropolitan)	212,822	45,097
Germany—		
Eastern Germany	41,479	16,213[2]
Federal Republic of Germany	95,738	52,785[2]
East Berlin	156	1,085[2]
West Berlin	186	2,211[2]
Greece	51,182	8,258
Holy See	– –	1
Hungary	35,919	9,953
Iceland	39,768	172[2]
Ireland	27,136	2,846
Italy	116,304	49,052
Liechtenstein	61	16
Luxembourg	998	324[2]
Monaco	– –	23
Netherlands	12,529	11,346[2]
Norway	125,065	3,556[2]
Poland	120,359	29,257
Portugal, incl. the Azores and Madeira Islands	35,599	9,052
Romania	91,699	18,256
San Marino	24	15
Spain, incl. Balearic and Canary Islands	194,396	29,894
Sweden	173,623	7,454[2]
Switzerland	15,941	5,240
*United Kingdom of Great Britain and Northern Ireland	94,215	52,157[17]
England and Wales	*58,345*	*45,244*[1]
Northern Ireland	*5,459*	*1,403*[1]
Scotland	*30,411*	*5,241*
Yugoslavia	98,766	18,448
TERRITORIES AND DEPENDENCIES		
Denmark—		
Faeroe Islands	540	34[2]
Norway—		
Svalbard and Jan Mayen Islands	24,101	1[1,13]
United Kingdom—		
*Channel Islands	75	103
*Gibraltar	2	26
*Isle of Man	227	54
*Malta and Gozo	122	325

For footnotes, see end of table, p. 181.

29.—Areas and Populations of the Countries or Areas of the World, 1959—concluded

Continent and Country	Area	Population
	sq. miles	'000
Oceania		
INDEPENDENT STATES		
*Australia, excl. aborigines	2,974,583	10,061
*New Zealand	103,736	2,331
TERRITORIES AND DEPENDENCIES		
Australia—		
*Christmas Island	60	3
*Cocos (Keeling) Islands	5	1
*Norfolk Island	14	1
*Papua	90,540	480
France—		
French Polynesia	1,544	80
New Caledonia and dependencies	7,336	70
New Zealand—		
*Cook Islands	90	18
*Niue	100	5
*Tokelau Islands	4	2
United Kingdom—		
*British Solomon Islands	11.500	115
*Fiji Islands	7,055	381
*Gilbert and Ellice Islands	349	45
*Pitcairn	2	[16]
*Tonga	269	62
United States—		
American Samoa	76	20
Guam	206	60
TRUST TERRITORIES		
*Nauru (Aust., N.Z., and Br. Adm.)	8	4
*New Guinea (Aust. Adm.)	93,000[19]	1,376
Pacific Islands (U.S. Adm.)	687	73
*Western Samoa (N.Z. Adm.)	1,130	104
CONDOMINIUMS		
*Canton and Enderbury (Anglo-American)	20	[16]
*New Hebrides (Anglo-French)	5,700	58
Union of Soviet Socialist Republics		
Union of Soviet Socialist Republics	8,649,821	210,500

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[1] Latest official estimate. [2] *De jure* population. [3] Excluding Walvis Bay. [4] Excluding nomad population in Egypt (55,073 at 1947 census) and Palestinian refugees in Syria (113,204 on Dec. 31, 1957). [5] Including nomad and other population estimated at 34,400 in 1946. [6] Including Walvis Bay. [7] Including armed forces overseas. [8] *De jure* population but including armed forces stationed in the area. [9] Excluding Indian jungle population numbering 45,429 in 1950. [10] *De jure* population but excluding Indian jungle population. [11] Including estimate of 350,000 for Indian jungle population. [12] Excluding Indian jungle population numbering 56,705 in 1950. [13] Excluding Indian and Negro population living in tribes estimated at 38,000 in 1959. [14] Excluding armed forces and foreigners. [15] Excluding nomad population numbering 440,175 at 1956 census. [16] Fewer than 500 persons. [17] Including armed forces outside the country but excluding Commonwealth and foreign armed forces stationed in the area. [18] Inhabited only during winter season; included in the *de jure* population of Norway. [19] Land area only.

CHAPTER IV.—IMMIGRATION AND CITIZENSHIP

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—IMMIGRATION AND EMIGRATION*

The history of immigration and the Immigration Act and Regulations is dealt with in detail in a special article entitled "Developments in Canadian Immigration" appearing in the 1957-58 Year Book at pp. 154-176. Supplementing that material is an article on the "Integration of Postwar Immigrants" at pp. 176-178 of the 1959 edition.

Section 1.—Immigration Policy and Administration

Since the end of the Second World War it has been the policy of the Government of Canada to stimulate the growth of the population by selective immigration. Efforts are made to choose immigrants of prospective adaptability to the Canadian way of life and to admit them at such times and in such numbers as employment conditions warrant.

Federal immigration policy is governed by the provisions of the Immigration Act and Regulations, which permit the admission to Canada of British subjects by birth or naturalization in the United Kingdom, Australia, New Zealand or South Africa; citizens of Ireland and of the United States; and French citizens born or naturalized in France or on the islands of St. Pierre and Miquelon. All, however, must be in good health, be of good character, and have sufficient means to maintain themselves until they have secured employment. Other classes of admissible immigrants consist of persons considered to be desirable in the light of social and economic conditions prevailing in Canada at the time, and possessed of qualifications for successful integration. Also admissible are certain categories of close relatives of citizens or legal permanent residents of Canada where the sponsor, in Canada, is in a position to receive and care for the prospective immigrants who must satisfy the requirements of the Immigration Act and Regulations. Agreements are in effect with the governments of India, Pakistan and Ceylon for the admission annually of 300, 100 and 50 persons, respectively, from those countries in addition to certain close relatives.

The Immigration Branch of the Department of Citizenship and Immigration administers the Immigration Act and Regulations. Twenty-seven visa officers are located abroad at London, Liverpool, Leeds, Bristol, Glasgow, Belfast, Dublin, Paris, Brussels, Berne, The Hague, Copenhagen, Cologne, Berlin, Hamburg, Munich, Stuttgart, Vienna, Oslo, Stockholm, Helsinki, Lisbon, Rome, Athens, Tel Aviv, New Delhi and Hong Kong. Four offices in the United States—at New York, Chicago, San Francisco and Denver—

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* Sections 1 and 2 of this Part were revised under the direction of the Deputy Minister, Department of Citizenship and Immigration, Ottawa.

furnish information and counselling but do not issue visas. Personnel at all posts are kept in close touch with economic conditions in Canada and thus are able to advise immigrants regarding prospects for successful settlement. Examination of immigrants and visitors is carried out at 349 ports of entry on the Canadian coasts, at points along the International Boundary, and at certain airports.

A primary objective of administration is satisfactory settlement. The Federal Government assists immigrants in establishing themselves in the Canadian community through the work of the Immigration Branch Settlement Service, the Canadian Citizenship and Canadian Citizenship Registration Branches and other government agencies, and co-operates closely with several voluntary agencies having the same objective.

Section 2.—Immigration Statistics

Postwar Immigration.—The extent of immigration to Canada in any period is affected both by domestic conditions and by conditions abroad. However, these influences are seldom immediately decisive. News of good economic conditions in Canada predisposes people in favour of this country but, because the immigration process usually takes from six to eighteen months, actual immigration is not always fully coincidental with the economic situation, so that immigration may at times be slight in good years but appear unduly heavy in less buoyant periods. The time-lag caused by selection, medical examination and documentation is unavoidable. Transportation is often another delaying factor and to these considerations must be added the effect of seasonal unemployment in Canada, which tends to discourage immigration during the months from November to April.

Since the end of World War II there have been wide annual fluctuations in immigration to Canada caused mainly by economic and political factors. Many of the persons who arrived in 1946 and 1947 were the wives and children of Canadian service men and their numbers were dictated by the availability of shipping. In 1948, as more shipping became available, the number of immigrants doubled. In addition to the large movement from the United Kingdom, thousands of displaced persons were admitted and Germans and Italians began to come forward in appreciable numbers after having been removed from the enemy alien category. As the high level of immediate postwar economic activity levelled off, there was a drop of 30,000 in the number of immigrants entering in 1949 compared with 1948, and a further drop of 20,000 in 1950. Then the outbreak of war in Korea created a new stimulus to industry and caused shortages of labour; at the same time fear of war in Europe made Canada seem a desirable haven. Thus in 1951 immigration increased nearly threefold and remained in excess of 150,000 for the following three years. Very significant numbers of Germans and Italians were admitted and the gap between them and the British Isles group was narrowed. Another minor economic setback in 1954 caused immigration to fall in 1955 by some 45,000 but, with the return of better times in North America and the deterioration of the political situation in Europe, immigration again rose by 55,000 in 1956. The Hungarian revolution and the Suez crisis of 1956 had a sharp impact on Canadian immigration in 1957 when 282,164 persons were admitted, including 31,643 from Hungary and 108,989 from the United Kingdom. This was the largest number of immigrants to enter Canada since 1913. The conclusion of the Suez affair and the suppression of the Hungarian revolt restored some measure of calm in Europe. Canada's economy suffered a recession in 1956 and 1957 while Europe's economic position improved, as a result of which only 124,851 immigrants came to Canada in 1958. The United Kingdom's recovery from the war and its aftermath was reflected in the fact that for the first time in the postwar years the British Isles group of arrivals was not the largest—persons from Italy were in first place, numbering 27,043 compared with 24,777 from the United Kingdom. This situation continued during 1958 and 1959. The total arrivals in these years dropped to 106,928 and 104,111, respectively, and in both years the number from Italy remained in first place above the number from the United Kingdom.

Immigration from the United Kingdom during the period 1946-60, inclusive, was 582,472 representing 29.0 p.c. of the total immigration to Canada in that period. Other large groups came from Italy, numbering 259,810 and representing 13.0 p.c. of the total; Germany, 234,774 representing 11.7 p.c.; Netherlands, 147,400 representing 7.4 p.c.; United States, 145,125 representing 7.2 p.c.; and Poland, 89,835 representing 4.5 p.c.

In each postwar year, up to and including 1957, the British Isles group was the largest, ranging from a low of 12,669 in 1950 to a high of 108,989 in 1957. Immigrants from the United States formed the second largest group in 1946 and 1947, and from Poland in 1948, 1949 and 1950. Persons from Germany filled this position from 1951 to 1954, in which years persons from Italy and the Netherlands also arrived in substantial numbers. In 1955 and 1956 persons from Italy were in second place but Hungarians took that position in 1957. Immigrants from Italy headed all groups in 1958, 1959 and 1960 with persons from the United Kingdom in second place. During the whole postwar period, immigration from the United States has remained relatively constant, ranging from a high of 11,474 in 1946 to a low of 7,393 in 1948; the annual average for the period was 9,665.

Total immigration to Canada for the years 1946-60, inclusive, was 2,005,230. The yearly totals for this period are shown in Table 1, together with annual figures back to 1913, the peak year of immigration into Canada.

1.—Immigrant Arrivals, 1913-60

Note.—Figures for 1852-93 are given in the 1942 Year Book, p. 153, and for 1894-1912 in the 1948-49 edition, p. 175.

Year	Arrivals	Year	Arrivals	Year	Arrivals	Year	Arrivals	Year	Arrivals
	No.		No.		No.		No.		No.
1913	400,870	1923	133,729	1933	14,382	1943	8,504	1952	164,498
1914	150,484	1924	124,164	1934	12,476	1944	12,801	1953	168,868
1915	36,665	1925	84,907	1935	11,277	1945	22,722	1954	154,227
1916	55,914	1926	135,982	1936	11,643	1946	71,719	1955	109,946
1917	72,910	1927	158,886	1937	15,101	1947	64,127	1956	164,857
1918	41,845	1928	166,783	1938	17,244	1948	125,414	1957	282,164
1919	107,698	1929	164,993	1939	16,994	1949	95,217	1958	124,851
1920	138,824	1930	104,806	1940	11,324	1950	73,912	1959	106,928
1921	91,728	1931	27,530	1941	9,329	1951	194,391	1960	104,111
1922	64,224	1932	20,591	1942	7,576				

Admissions by country of last permanent residence are given in Table 2 for the years 1956-60 only. During that five-year period, 29.7 p.c. of the immigration flow came from the United Kingdom and Ireland, 55.9 p.c. from Continental Europe, 6.9 p.c. from the United States and 7.5 p.c. from all other countries.

2.—Immigrant Admissions by Country of Last Permanent Residence, 1956-60

Note.—Comparable figures for 1946-49 are given in the 1951 Year Book, p. 143, for 1950-52 in the 1956 edition, p. 182 and for 1953-55 in the 1959 edition, p. 179; figures in less detail for 1939-45 appear in the 1950 edition, p. 186.

Country	1956	1957	1958	1959	1960
	No.	No.	No.	No.	No.
Commonwealth—					
British Isles—					
England	36,422	79,811	18,011	12,825	13,570
Northern Ireland	2,967	4,988	1,140	970	1,035
Scotland	10,055	22,180	5,060	4,053	4,561
Wales	802	1,724	456	311	373
Lesser Isles	144	286	110	63	46
Totals, British Isles	50,390	108,989	24,777	18,222	19,585

2.—Immigrant Admissions by Country of Last Permanent Residence, 1956-60—concluded

Country	1956	1957	1958	1959	1960
	No.	No.	No.	No.	No.
Commonwealth—concluded					
Other Commonwealth—					
Australia	1,578	2,772	1,898	1,109	1,273
Hong Kong	615	866	1,752	2,018	1,146
India	254	186	325	585	505
Malta	363	586	447	419	468
New Zealand	346	573	446	403	384
Union of South Africa	342	464	367	287	503
West Indies, Federation of	1,058	1,162	1,192	1,196	1,168
Other	635	774	617	507	502
Totals, Other Commonwealth	5,191	7,383	7,044	6,524	5,949
Totals, All Commonwealth	**55,581**	**116,372**	**31,821**	**24,746**	**25,534**
Republic of Ireland	**2,229**	**5,358**	**1,226**	**815**	**799**
Africa[1]	424	1,866	699	308	154
Asia[1]	1,736	1,119	1,158	779	395
Europe—[1]					
Austria	4,330	5,714	4,544	1,510	2,038
Belgium	3,080	3,909	1,776	1,471	1,282
Finland	1,031	2,684	1,177	845	964
France	3,809	5,869	2,727	2,153	2,944
Germany	26,061	28,430	13,888	10,423	10,774
Greece	4,986	5,460	5,190	4,867	4,856
Hungary	4,010	31,643	2,362	589	507
Italy	27,939	27,740	27,043	25,655	20,681
Netherlands	7,792	11,934	7,420	5,243	5,429
Poland	186	690	2,292	3,470	2,668
Portugal	1,697	4,423	1,938	4,080	5,023
Scandinavian Countries—					
Denmark	3,573	7,683	1,746	1,359	1,115
Other	1,484	2,492	978	766	711
Switzerland	1,514	1,800	1,024	855	1,048
Yugoslavia	453	1,048	984	958	881
Other	585	956	509	598	930
North America—[1]					
Mexico	71	124	104	98	115
United States of America	9,777	11,008	10,846	11,338	11,247
Other	78	119	131	157	158
South America[1]	1,354	2,188	1,980	1,565	1,666
Middle East—[1]					
Israel	309	482	531	1,490	1,532
Lebanon	454	401	312	377	283
Other	254	588	371	356	300
Other Countries	**60**	**64**	**74**	**57**	**77**[2]
Totals, All Countries	**164,857**	**282,164**	**124,851**	**106,928**	**104,111**

[1] Excludes Commonwealth countries. [2] Includes one born at sea.

Other analyses of the content of the immigration movement in recent years are given in Tables **3** to **9**. The numbers of persons deported from Canada for various reasons in the years 1951-60 are shown in Table **10**.

Sex, Age and Marital Status.—In the ten-year period 1951-60 adult males comprised 40.6 p.c. of the immigrant arrivals, adult females 33.9 p.c. and children under 18 years of age the remaining 25.5 p.c. Without relation to age, 54.0 p.c. of the newcomers were males.

3.—Sex Distribution of Immigrants as Adult Males, Adult Females and Children, 1951-60

NOTE.—Figures from 1930 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Year	Adult Males	Adult Females	Under 18 Years		Total
			Males	Females	
	No.	No.	No.	No.	No.
1951	95,818	53,239	24,348	20,986	194,391
1952	66,083	53,443	23,766	21,206	164,498
1953	68,269	56,425	23,153	21,021	168,868
1954	64,551	51,690	19,980	18,006	154,227
1955	42,425	40,120	14,403	12,998	109,946
1956	67,880	55,574	21,661	19,742	164,857
1957	115,765	92,202	38,461	35,736	282,164
1958	44,008	48,655	16,622	15,566	124,851
1959	37,110	41,891	14,366	13,561	106,928
1960	37,653	40,241	13,365	12,852	104,111

In 1960, 77.2 p.c. of the males and 79.1 p.c. of the females arriving were 15 years of age or over as compared with 75.7 p.c. and 78.9 p.c., respectively, in 1959. Of those arriving in 1960 who were 15 years of age or over, 50.4 p.c. were married, 43.6 p.c. were single and 5.5 p.c. were widowed or divorced. The total number of single males exceeded the number of single females by 4,786 but there were more females than males in the widowed and divorced categories. In the single class, males were 17.9 p.c. more numerous than females, the numerical superiority being particularly heavy in the age group 15-29 years.

4.—Sex and Marital Status of Immigrant Arrivals, by Age Group, 1960

Sex and Age Group	Single	Married	Widowed	Divorced	Separated	Total
	No.	No.	No.	No.	No.	No.
Males—						
0 - 14 years	11,625	—	—	—	—	11,625
15 - 19 "	4,145	36	—	—	—	4,181
20 - 24 "	8,216	1,730	8	7	5	9,966
25 - 29 "	4,769	4,124	9	43	11	8,956
30 - 39 "	2,288	6,911	21	144	31	9,395
40 - 49 "	335	3,139	34	58	20	3,586
50 - 59 "	86	1,723	82	50	11	1,952
60 years or over	52	981	294	23	7	1,357
Totals, Males	**31,516**	**18,644**	**448**	**325**	**85**	**51,018**
Females—						
0 - 14 Years	11,105	—	—	—	—	11,105
15 - 19 "	3,400	998	2	1	—	4,401
20 - 24 "	6,305	5,162	4	33	3	11,507
25 - 29 "	3,165	4,806	14	84	16	8,085
30 - 39 "	2,000	6,295	94	225	48	8,662
40 - 49 "	403	2,636	297	172	37	3,545
50 - 59 "	182	1,713	854	171	91	3,011
60 years or over	170	778	1,708	75	46	2,777
Totals, Females	**26,730**	**22,388**	**2,973**	**761**	**241**	**53,093**

Birthplace, Nationality and Origin.—Of the immigrant arrivals in 1960, 24.6 p.c. were born in Commonwealth countries or in the Republic of Ireland, compared with 22.4 p.c. in 1959, 25.0 p.c. in 1958, 41.8 p.c. in 1957, 33.5 p.c. in 1956, 30.3 p.c. in 1955, 31.2 p.c. in 1954 and 29.9 p.c. in 1953. In 1960, 34.5 p.c. of the newcomers were born in Italy, Germany or the Netherlands, 8.4 p.c. were born in the United States and 32.5 p.c. in other countries.

5.—Birthplaces of Immigrant Arrivals, 1958-60

Note.—Figures from 1942 are given in the corresponding table of previous Year Books beginning with the 1948-49 edition.

Birthplace	1958	1959	1960
	No.	No.	No.
Commonwealth—			
British Isles—			
England	16,050	11,168	11,635
Northern Ireland	1,308	1,045	1,143
Scotland	5,312	4,326	4,756
Wales	574	409	496
Lesser Isles	75	45	30
Totals, British Isles	23,319	16,993	18,060
Other Commonwealth—			
Australia	1,487	929	1,227
Canada	736	795	754
India	629	770	750
Malta	484	434	500
New Zealand	431	384	417
Union of South Africa	577	495	718
West Indies, Federation of	1,221	1,258	1,199
Other	588	684	756
Republic of Ireland	**1,685**	**1,243**	**1,235**
Africa[1]	**889**	**395**	**333**
Asia—[1]			
China	2,527	2,367	1,229
Japan	193	193	169
Other	417	438	99
Europe—[1]			
Austria	1,158	975	1,077
Belgium	1,190	960	899
Czechoslovakia	440	357	355
Europe—concluded			
Denmark	1,780	1,365	1,130
Finland	1,263	900	1,007
France	2,384	1,769	2,186
Germany	13,015	9,704	9,920
Greece	5,286	4,898	4,893
Hungary	2,985	1,362	1,470
Italy	28,062	26,334	20,758
Netherlands	7,182	5,092	5,268
Norway	462	366	353
Poland	3,462	4,225	3,552
Portugal	1,970	4,162	5,099
Romania	444	541	632
Switzerland	923	727	850
Union of Soviet Socialist Republics[2]	835	1,033	978
Yugoslavia	5,095	2,624	3,880
Other	1,074	825	1,293
Middle East—[1]			
Egypt	108	229	202
Israel	234	518	420
Lebanon	303	350	272
Turkey	296	311	291
Other	37	56	44
North America—[1]			
Mexico	105	88	105
United States of America	8,460	8,873	8,740
Other	127	156	174
South America[1]	689	544	578
Grand Totals	**124,851**[3]	**106,928**[4]	**104,111**[5]

[1] Excludes Commonwealth countries. [2] In both Europe and Asia. [3] Includes 4 born at sea and 295 not stated. [4] Includes 206 not stated. [5] Includes 4 born at sea and 235 from other countries.

Out of every hundred immigrants admitted to Canada during the three-year period 1958-60, 23 were citizens of Italy, 20 were British subjects, 10 were citizens of Germany, 9 of the United States, 5 of the Netherlands, and 4 of Greece; other nationalities made up the remaining 29.

6.—Citizenship of Immigrant Arrivals, 1958-60

Note.—Figures from 1930 are given in the corresponding table of previous Year Books beginning with the 1936 edition.

Country of Citizenship	1958	1959	1960
	No.	No.	No.
Australia	1,798	1,118	1,403
Austria	1,033	897	1,102
Belgium	1,087	875	792
Central America	12	14	14
Ceylon	33	24	21
China	2,473	2,313	1,158
Czechoslovakia	25	32	42
Denmark	1,784	1,381	1,133
Egypt	47	37	33
Finland	1,261	890	989
France	2,845	1,933	2,395
Germany	14,107	10,401	10,596
Greece	5,273	4,894	4,922
Hungary	2,315	626	534
India	334	582	534
Ireland	1,439	950	1,056
Israel	577	1,577	1,581
Italy	28,242	26,564	21,040
Japan	183	190	159
Lebanon	317	383	305

6.—Citizenship of Immigrant Arrivals, 1958-60—concluded

Country of Citizenship	1958	1959	1960
	No.	No.	No.
Luxembourg	36	21	14
Mexico	94	86	101
Morocco	209	126	48
Netherlands	7,488	5,310	5,480
New Zealand	453	388	412
Norway	461	363	349
Pakistan	62	64	98
Poland	2,367	3,509	2,704
Portugal	1,963	4,176	5,108
South America	513	451	475
Southern Rhodesia	25	26	56
Spain	447	382	603
Sweden	292	287	254
Switzerland	896	725	836
Turkey	214	217	218
Union of South Africa	411	341	640
U.S.S.R.	27	36	182
United Kingdom and Colonies	26,885	20,372	21,226
United States	9,695	10,240	10,060
Yugoslavia	935	944	873
Other African	71	38	5
Other Asian	51	60	50
Other European	210	213	179
Stateless	5,817	2,785	4,230
Others	44	87	101
Totals	**124,851**	**106,928**	**104,111**

Immigrants of Continental European origin comprised 70.5 p.c. of the influx during 1960 and those of British origin made up 25.4 p.c. Proportions of Continental Europeans in 1959 and 1958 were 71.5 p.c. and 70.0 p.c., respectively, and British origin 23.3 p.c. and 26.0 p.c. in the same periods.

7.—Origins of Immigrant Arrivals, 1958-60

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1939 edition.

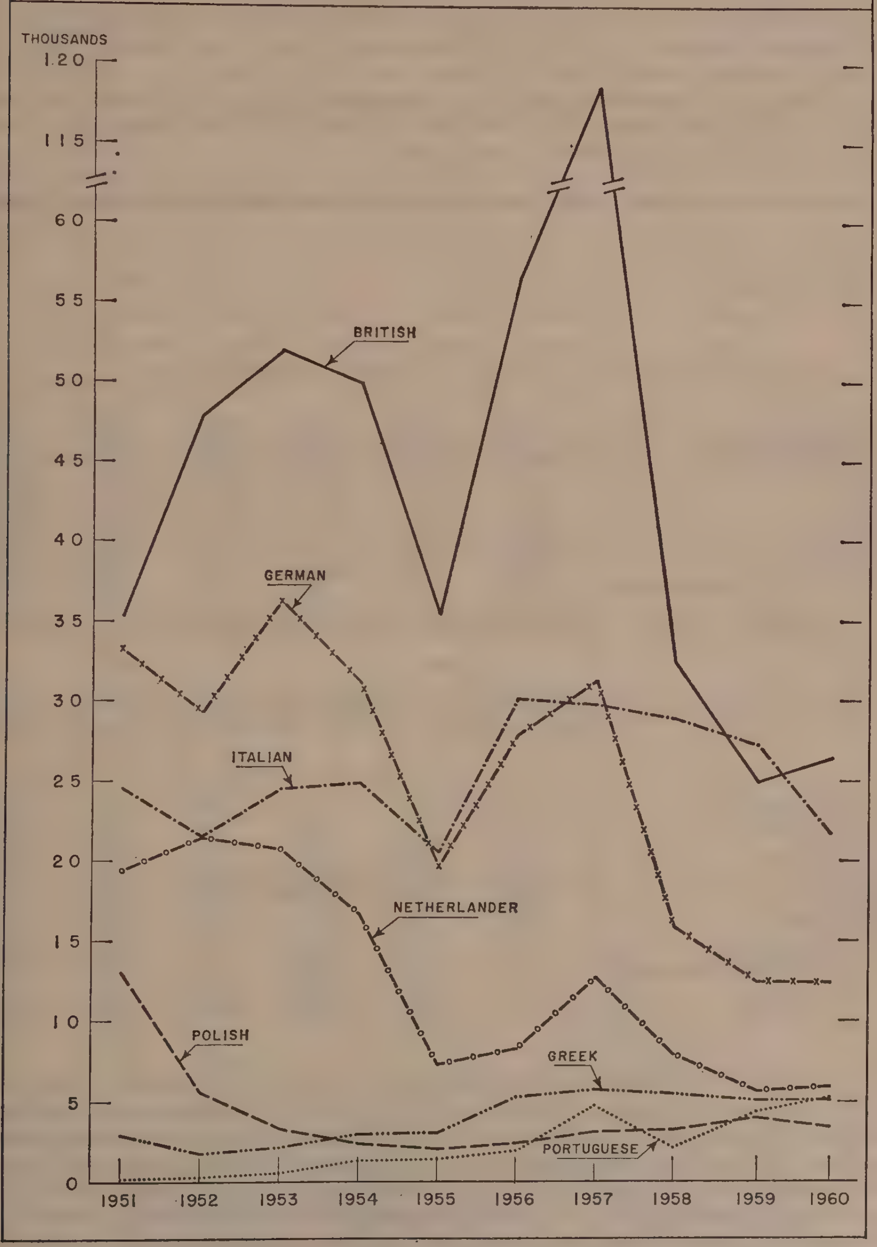
Origin	1958	1959	1960
	No.	No.	No.
British—			
English	20,224	15,034	15,601
Irish	4,792	3,834	4,012
Scottish	6,713	5,526	6,130
Welsh	760	563	692
Totals, British	**32,489**	**24,957**	**26,435**
Continental European—			
Albanian	15	21	33
Austrian	971	784	1,001
Belgian	1,017	844	776
Bulgarian	21	52	47
Czech and Slovak	198	207	220
Estonian	131	103	143
Finnish	1,296	944	1,047
French	3,292	2,622	2,940
German	15,842	12,481	12,430
Greek	5,476	5,035	5,093
Hungarian	2,788	1,101	1,279
Italian	28,878	27,223	21,690
Jewish	2,895	3,395	2,964
Latvian	212	140	161
Lithuanian	170	110	104
Luxemburger	26	12	13
Maltese	482	424	485
Netherlander	7,933	5,684	5,983
Polish	3,171	3,960	3,401
Portuguese	2,188	4,372	5,277
Romanian	153	169	189
Russian	252	202	232
Continental European— concluded			
Scandinavian—			
Danish	1,908	1,501	1,207
Icelandic	52	30	14
Norwegian	658	517	551
Swedish	471	484	489
Spanish[1]	685	599	850
Swiss[2]	855	679	811
Ukrainian	405	346	349
Yugoslavic[1]	4,930	2,360	3,572
Totals, Continental European	**87,371**	**76,401**	**73,351**
Other—			
Arabian	75	62	84
Armenian	197	242	164
Chinese	2,630	2,586	1,402
East Indian	459	741	691
Indian (American)	24	30	25
Japanese	193	197	169
Lebanese	260	288	242
Mexican	34	23	45
Negro	881	1,104	1,135
Persian	13	—	—
Syrian	33	59	28
Turkish	103	86	133
Not stated	89	152	207
Totals, Other	**4,991**	**5,570**	**4,325**
Grand Totals	**124,851**	**106,928**	**104,111**

[1] Includes a few minor groups.

[2] Reported as Swiss origin but evidently one of the constituent races such as German, French, Italian, etc.

ORIGINS OF IMMIGRANT ARRIVALS, 1951-'60

(LARGEST NUMERICAL GROUPS IN 1960)



Destinations and Occupations.—Upon arrival in Canada, immigrants are asked to state their intended destination. According to these records, Ontario absorbed by far the highest proportion of arrivals in the four-year period 1957-60—50.8 p.c. of all the males and 53.3 p.c. of all the females. Quebec was the second most important province of destination, receiving 21.7 p.c. of the males and 21.0 p.c. of the females. The proportions intending to settle in British Columbia were 11.8 p.c. and 11.5 p.c., respectively; in the Prairie Provinces 13.5 p.c. and 12.0 p.c., respectively; and in the Atlantic Provinces 2.0 p.c. and 2.1 p.c., respectively. The provincial distribution has changed little from year to year throughout the whole postwar period.

8.—Intended Destinations of Male and Female Immigrants Admitted to Canada, 1957-60

Province	1957			1958		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
Newfoundland	206	289	495	190	183	373
Prince Edward Island	67	67	134	38	40	78
Nova Scotia	1,447	1,342	2,789	933	853	1,786
New Brunswick	906	768	1,674	547	484	1,031
Quebec	30,941	24,132	55,073	13,994	14,449	28,443
Ontario	77,632	69,465	147,097	30,542	33,311	63,853
Manitoba	6,921	4,693	11,614	2,566	2,166	4,732
Saskatchewan	2,588	1,839	4,427	1,343	1,252	2,595
Alberta	12,186	8,945	21,131	4,180	4,249	8,429
British Columbia	21,224	16,304	37,528	6,235	7,165	13,400
Yukon and Northwest Territories	108	94	202	62	69	131
Canada	**154,226**	**127,938**	**282,164**	**60,630**	**64,221**	**124,851**
	1959			1960		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
Newfoundland	175	170	345	137	169	306
Prince Edward Island	47	44	91	38	45	83
Nova Scotia	523	564	1,087	598	612	1,210
New Brunswick	307	333	640	317	317	634
Quebec	12,253	12,563	24,816	11,794	11,980	23,774
Ontario	26,657	29,319	55,976	26,396	28,095	54,491
Manitoba	1,839	1,771	3,610	2,338	1,999	4,337
Saskatchewan	877	938	1,815	1,127	960	2,087
Alberta	3,554	3,869	7,423	3,454	3,495	6,949
British Columbia	5,177	5,823	11,000	4,765	5,355	10,120
Yukon and Northwest Territories	67	58	125	54	66	120
Canada	**51,476**	**55,452**	**106,928**	**51,018**	**53,093**	**104,111**

In like manner, immigrant arrivals are asked to record the occupations which they intend to follow in Canada. Approximately 51.5 p.c. of the persons admitted in 1960 declared that they would enter the labour force. The other 48.5 p.c. were wives, children and other dependants or were retired persons. Of the male workers, 14.4 p.c. were classed as professional and managerial, 14.1 p.c. were in agricultural occupations, 4.5 p.c. in service occupations, 33.2 p.c. in manufacturing, mechanical and construction trades, and 19.8 p.c. were general labourers. About 43 p.c. of the female immigrants entering the labour force were intending to follow service occupations. Details are given in Table 9.

9.—Intended Occupations of Male and Female Immigrants Admitted to Canada, 1957-60

Intended Occupation	1957			1958			1959			1960		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Managerial (owners, managers, officials)	**1,168**	**48**	**1,216**	**916**	**28**	**944**	**800**	**37**	**837**	**793**	**32**	**825**
Professional	**11,784**	**4,256**	**16,040**	**4,784**	**2,769**	**7,553**	**4,270**	**2,677**	**6,947**	**4,569**	**2,867**	**7,436**
Accountants and auditors	721	41	762	289	14	303	244	13	257	270	13	283
Architects	374	8	382	123	5	128	98	9	107	74	4	78
Chemists (other than pharmacists)	441	44	485	164	21	185	167	13	180	148	9	157
Dentists	55	4	59	15	3	18	42	6	48	25	4	29
Draughtsmen and designers	2,244	159	2,403	490	48	538	349	29	378	446	34	480
Aeronautical engineers	245	—	245	62	—	62	23	—	23	36	—	36
Chemical engineers	154	1	155	70	—	70	56	—	56	62	—	62
Civil engineers (and other professional engineers, *n.e.s.*)	906	2	908	316	—	316	258	—	258	224	—	224
Forestry engineers	25	—	25	10	—	10	6	—	6	6	—	6
Electrical engineers	889	2	891	255	—	255	198	—	198	165	—	165
Mechanical engineers	750	2	752	232	—	232	181	—	181	196	—	196
Metallurgical engineers	31	1	32	8	—	8	12	—	12	6	—	6
Mining engineers	94	—	94	57	—	57	49	—	49	30	—	30
Laboratory technicians and assistants, *n.e.s.*	588	254	842	202	142	344	184	126	310	250	113	363
Graduate nurses	—	1,729	1,729	1	1,144	1,145	—	1,073	1,073	—	1,290	1,290
Physicians and surgeons	546	89	635	340	54	394	381	58	439	389	52	441
Teachers and professors	851	987	1,838	584	716	1,300	597	653	1,250	704	692	1,396
Other professional workers	2,870	933	3,803	1,566	622	2,188	1,425	697	2,122	1,538	656	2,194
Clerical	**5,885**	**10,944**	**16,829**	**1,888**	**4,857**	**6,745**	**1,582**	**3,877**	**5,459**	**1,747**	**4,113**	**5,860**
Stenographers and typists	117	6,263	6,380	36	3,000	3,036	30	2,299	2,329	30	2,537	2,567
Other clerical workers	5,768	4,681	10,449	1,852	1,857	3,709	1,552	1,578	3,130	1,717	1,576	3,293
Transportation	**4,092**	**35**	**4,127**	**897**	**5**	**902**	**756**	**4**	**760**	**904**	**9**	**913**
Air pilots, captains and mates, railway conductors, locomotive engineers, etc.	381	—	381	175	—	175	106	—	106	111	—	111
Other transportation workers	3,711	35	3,746	722	5	727	650	4	654	793	9	802
Communication	**561**	**566**	**1,127**	**150**	**177**	**327**	**97**	**142**	**239**	**169**	**141**	**310**
Commercial	**4,219**	**1,913**	**6,132**	**1,382**	**684**	**2,066**	**1,365**	**588**	**1,953**	**1,330**	**678**	**2,008**
Commercial travellers and salesmen	2,970	56	3,026	886	20	906	853	21	874	925	19	944
Sales clerks	578	1,653	2,231	212	603	815	226	524	750	170	616	786
Other trading workers	671	204	875	284	61	345	286	43	329	235	43	278
Financial	**414**	**13**	**427**	**158**	**5**	**163**	**148**	**6**	**154**	**140**	**4**	**144**
Service	**4,255**	**13,319**	**17,574**	**2,090**	**9,411**	**11,501**	**1,707**	**8,033**	**9,740**	**1,652**	**7,111**	**8,763**
Barbers, hairdressers, manicurists	534	674	1,208	377	344	721	344	283	627	345	330	675

9.—Intended Occupations of Male and Female Immigrants Admitted to Canada, 1957-60—concluded

Intended Occupation	1957			1958			1959			1960		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Service—concluded												
Nurses' aides	255	1,208	1,463	71	681	752	79	644	723	78	549	627
Cooks	650	282	932	308	113	421	273	91	364	307	84	391
Domestic servants	97	10,148	10,245	62	7,816	7,878	52	6,662	6,714	26	5,767	5,793
Other non-professional service workers	2,719	1,007	3,726	1,272	457	1,729	959	353	1,312	896	381	1,277
Agricultural	**10,704**	**134**	**10,838**	**4,992**	**79**	**5,071**	**4,867**	**98**	**4,965**	**5,241**	**80**	**5,321**
Farmers and agriculturists	226	—	226	157	—	157	126	—	126	105	—	105
Farm labourers	10,478	134	10,612	4,835	79	4,914	4,741	98	4,839	5,136	80	5,216
Fishing, Trapping and Logging	**827**	—	**827**	**169**	—	**169**	**123**	—	**123**	**188**	—	**188**
Fishermen	28	—	28	21	—	21	21	—	21	32	—	32
Trappers	—	—	—	—	—	—	1	—	1	—	—	—
Bushmen and lumbermen	799	—	799	148	—	148	101	—	101	156	—	156
Mining	**1,866**	—	**1,866**	**344**	—	**344**	**248**	—	**248**	**479**	—	**479**
Miners	1,703	—	1,703	291	—	291	214	—	214	440	—	440
Oil field workers	122	—	122	23	—	23	19	—	19	14	—	14
Other workers in mines, quarries	41	—	41	30	—	30	15	—	15	25	—	25
Manufacturing, Mechanical and Construction	**49,966**	**4,410**	**54,376**	**16,022**	**1,454**	**17,476**	**11,459**	**1,333**	**12,792**	**12,317**	**1,234**	**13,551**
Aircraft mechanics and repairmen	674	—	674	102	—	102	64	—	64	67	—	67
Automobile mechanics and repairmen	3,425	3	3,428	981	—	981	674	—	674	851	—	851
Bakers	1,001	29	1,030	481	15	496	351	9	360	406	7	413
Blacksmiths, hammermen, forgemen	353	—	353	158	—	158	112	—	112	102	—	102
Boilermakers, platers	155	—	155	32	—	32	18	—	18	29	—	29
Brick and stone masons	3,122	—	3,122	1,385	—	1,385	1,124	—	1,124	942	—	942
Butchers and meat cutters	861	2	863	419	3	422	284	1	285	356	3	359
Butter and cheese makers	15	1	16	6	—	6	3	—	3	4	—	4
Cabinet and furniture makers	1,087	—	1,087	515	—	515	266	—	266	292	—	292
Carpenters	4,434	—	4,434	1,638	—	1,638	1,224	—	1,224	1,246	—	1,246
Compositors and typesetters	305	—	305	108	—	108	82	—	82	150	—	150
Construction machinery operators	384	—	384	107	—	107	65	—	65	82	—	82
Coremakers	23	—	23	3	1	4	5	—	5	5	—	5
Dressmakers and seamstresses	49	1,676	1,725	21	745	766	13	774	787	17	659	676
Electricians and wiremen	3,432	—	3,432	952	—	952	697	—	697	737	—	737
Electroplaters	105	—	105	14	—	14	15	—	15	22	—	22
Furriers	157	45	202	70	12	82	57	12	69	76	9	85
Glove makers	12	4	16	5	—	5	1	1	2	1	2	3
Jewellers and watchmakers	345	17	362	133	7	140	104	—	104	102	2	104
Leather cutters	8	—	8	6	—	6	1	—	1	1	—	1
Machine operators	2,252	38	2,290	426	15	441	270	10	280	343	13	356
Machinists	1,984	76	2,060	493	12	505	432	12	444	348	10	358
Mechanics and repairmen	3,322	—	3,322	1,206	—	1,206	909	—	909	1,055	—	1,055
Metal fitters and assemblers	3,357	32	3,389	881	12	893	399	3	402	509	9	518

Millwrights	66	—	66	19	—	19	10	—	10	12	—	12
Moulders	386	1	387	107	—	107	64	—	64	75	—	75
Painters, decorators, glaziers	2,084	—	2,084	747	—	747	575	—	575	622	—	622
Patternmakers	169	—	169	28	—	28	16	—	16	15	—	15
Photoengravers and lithographers	49	—	49	26	—	26	14	—	14	11	—	11
Plasterers and lathers	364	—	364	112	—	112	85	—	85	86	—	86
Plumbers and pipe fitters	1,449	—	1,449	425	—	425	337	—	337	331	—	331
Printers and pressmen and plate printers	373	—	373	104	—	104	85	—	85	63	—	63
Radio repairmen	637	10	647	193	1	194	126	4	130	150	2	152
Sawyers (wood)	57	—	57	19	—	19	16	—	16	7	—	7
Sheet metal workers and tinsmiths	640	—	640	159	3	162	102	—	102	102	—	102
Shoemakers and shoe repairers	630	—	630	374	—	374	243	—	243	254	—	254
Spinners and weavers	153	177	330	38	19	57	23	20	43	49	16	65
Stationary engineers	387	—	387	96	—	96	85	—	85	64	—	64
Stonecutters and dressers	28	—	28	7	—	7	8	—	8	11	—	11
Tailors	1,015	185	1,200	493	80	573	409	82	491	425	43	468
Tanners	24	—	24	20	—	20	4	—	4	8	—	8
Toolmakers, diemakers and setters	1,704	—	1,704	304	1	305	190	—	190	234	—	234
Upholsterers	378	17	395	94	4	98	87	4	91	97	1	98
Welders and flame cutters	1,700	8	1,708	563	2	565	290	—	290	396	3	399
Other workers in food products	360	39	399	105	10	115	69	10	79	90	13	103
Other workers in rubber products	91	4	95	23	—	23	21	1	22	21	1	22
Other workers in leather and leather products	120	39	159	40	4	44	19	5	24	26	2	28
Other workers in textiles	351	210	561	58	40	98	70	21	91	73	26	99
Other workers in clothing and textile goods	200	674	874	56	194	250	43	155	198	65	192	257
Other workers in wood products	473	17	490	128	2	130	89	4	93	87	2	89
Workers in pulp, paper and paper products	98	8	106	12	2	14	16	1	17	26	2	28
Other workers in printing and publishing	201	108	309	72	29	101	38	19	57	49	32	81
Other metal workers	946	7	953	219	3	222	224	3	227	263	1	264
Other workers in non-metallic mineral products	251	9	260	128	4	132	85	3	88	85	3	88
Other manufacturing and mechanical workers	2,848	942	3,790	809	213	1,022	616	171	787	586	167	753
Other construction workers	863	—	863	301	—	301	230	—	230	188	—	188
Labourers (other than agricultural, fishing, logging and mining)	**19,048**	**423**	**19,471**	**9,306**	**82**	**9,388**	**8,815**	**125**	**8,940**	**7,361**	**121**	**7,482**
Not Stated	**543**	**118**	**661**	**299**	**130**	**429**	**268**	**126**	**394**	**219**	**74**	**293**
Totals, Workers	**115,332**	**36,179**	**151,511**	**43,397**	**19,681**	**63,078**	**36,505**	**17,046**	**53,551**	**37,109**	**16,464**	**53,573**
Dependants—												
Wives	—	52,533	52,533	—	24,795	24,795	—	21,223	21,223	—	20,654	20,654
Children	36,639	34,034	70,673	15,832	14,612	30,444	13,581	12,552	26,133	12,656	11,970	24,626
Others	2,255	5,192	7,447	1,401	5,133	6,534	1,390	4,631	6,021	1,253	4,005	5,258
Totals, Immigrants	**154,226**	**127,938**	**282,164**	**60,630**	**64,221**	**124,851**	**51,476**	**55,452**	**106,928**	**51,018**	**53,093**	**104,111**

Deportations.—Deportations by cause and nationality are shown in Table 10 for the years 1951-60. Persons who have not yet acquired domicile (five years residence in Canada) may be deported if they fall into prohibited classes at time of entry or within five years of entry, if they have engaged in commercialized vice, have been convicted under the Criminal Code or have become inmates of prisons or mental institutions, or have gained entry by fraudulent means. The causes that may lead to deportation are narrowed after a person has acquired domicile. A person not a citizen may be deported regardless of length of residence if he is found to be a member of a subversive organization or engages in subversive activities, or if he has been convicted of an offence involving disloyalty to the Queen, or if he has, outside of Canada, engaged in activities detrimental to the security of Canada. A Canadian citizen cannot be deported.

10.—Deportations,[1] by Cause and Nationality, 1951-60

Note.—Figures from 1903 are given in the corresponding table of previous Year Books.

Cause and Nationality	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Cause										
Mental and physical	40	54	85	74	125	91	55	81	107	66
Public charges	14	23	14	2	23	21	13	7	10	15
Criminality	85	102	121	210	192	164	145	170	232	200
Misrepresentation and stealth	286	330	309	249	282	249	262	338	317	236
Other causes	36	70	66	118	81	79	34	68	85	54
Totals, Deportations	**461**	**579**	**595**	**653**	**703**	**604**	**509**	**664**	**751**	**571**
Nationality										
British	190	214	237	249	227	212	155	155	204	125
United States	70	82	92	88	124	123	98	132	175	117
Other	201	283	266	316	352	269	256	377	372	329

[1] Includes deserting seamen deported.

Returning Canadians.—The numbers of Canadians returning to Canada during each of the ten years 1951-60 after having resided in the United States were:—

Year	*No.*	*Year*	*No.*
1951	3,635	1956	4,740
1952	4,707	1957	5,426
1953	4,606	1958	5,297
1954	4,516	1959	5,243
1955	3,942	1960	5,233

Section 3.—Emigration Statistics

Emigration from Canada is an important factor tending to offset to some exten present and past immigration activities. The major outward movement has always, c course, been to the United States and that movement, both of native-born Canadiar and of Europeans who originally migrated to Canada, has attained considerable propo tions at certain periods. No Canadian statistics on emigration are available but Table 1 gives figures taken from the annual reports of the Immigration and Naturalization Servic of the United States Department of Justice. These figures show the numbers of person entering the United States from Canada during the years 1950-59 with the expresse intention of establishing permanent residence in that country. They do not incluc persons travelling for pleasure, even for extended periods of time, holders of borde crossing cards (normally issued to persons living in border areas of Canada but workir in the United States) or casual tourist crossings in these same areas.

Of the 34,599 persons entering the United States from Canada in the year ende June 30, 1959, 23,082 were native-born Canadians—10,250 males and 12,832 female Only about one-quarter, or 5,919, of the total native-born emigrants were males in tl productive age group 20-59 years. By occupation, the largest group of the total of 23,0 native-born persons was the professional or technical group which numbered 3,157; clerical or kindred workers numbered 2,469, and 1,222 were classed as craftsmen or foremen. On the other hand, 12,309 persons or slightly more than 53 p.c. of the total were classed as housewives, children and others with no occupation. Altogether, 36.7 p.c. of the total were children under 20 years of age.

11.—Persons Entering the United States from Canada, Years Ended June 30, 1950-59

NOTE.—Includes only persons who have declared their intention of remaining permanently in the United States when applying for a visa (see text above). SOURCE: Immigration and Naturalization Service, United States Department of Justice.

Year	Canadian-Born	Total from Canada	Year	Canadian-Born	Total from Canada
	No.	No.		No.	No.
1950	18,043	21,885	1955	23,091	32,435
1951	20,809	25,880	1956	29,533	42,363
1952	28,141	33,354	1957	33,203	46,354
1953	28,967	36,283	1958	30,055	45,143
1954	27,055	34,873	1959	23,082	34,599

PART II.—CANADIAN CITIZENSHIP*

Naturalization procedures and events leading to the passing of the Canadian Citizenship Act are given in the 1951 Year Book, pp. 153-155.

Section 1.—The Canadian Citizenship Act

The Canadian Citizenship Act came into force on Jan. 1, 1947, its purpose being to give a clear definition of Canadian citizenship and provide an underlying community of status for all the people of Canada. Since Jan. 18, 1950, the administration of Canadian citizenship has been the responsibility of the Department of Citizenship and Immigration. The provisions of the Act and its several amendments are outlined in some detail in the 1955 Year Book, pp. 177-181. More briefly, they are given in the following paragraphs.

Natural-Born Canadian Citizens, Born before Jan. 1, 1947.—The Act conferred natural-born status upon two categories of persons in being on Jan. 1, 1947. These were (1) those born in Canada or on a Canadian ship or aircraft and who were not aliens on Jan. 1, 1947; and (2) those born outside of Canada who were not aliens on Jan. 1, 1947 and who were entitled to claim derivative citizenship in accordance with the provisions of the Act.

The Act provides that a person in the second category who was a minor on Jan. 1, 1947 will automatically cease to be a Canadian citizen on his 24th birthday or on Jan. 1, 1954, whichever is the later date, unless he has his place of domicile in Canada at such date or has, before such date and after reaching the age of 21 years, filed a declaration of retention of Canadian citizenship.

Natural-Born Canadian Citizens, Born after Dec. 31, 1946.—A person born outside of Canada subsequent to that date, whose responsible parent is considered a Canadian citizen pursuant to the terms of the Canadian Citizenship Act, is a Canadian if his birth is registered with the Registrar of Canadian Citizenship within two years of its occurrence or within such extended period as the Minister may authorize in special cases.

A person who becomes a natural-born Canadian citizen in such a manner will automatically cease to be a Canadian citizen if he fails to file a declaration of retention prior to his 24th birthday and does not have his place of domicile in Canada upon that date.

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* Prepared in the Citizenship Registration Branch under the direction of the Deputy Minister, Department of Citizenship and Immigration, Ottawa.

Canadian Citizens other than Natural-Born.—Before the 1953 amendments to the Citizenship Act, the only persons who acquired Canadian citizenship on Jan. 1, 1947 through the transitional clauses of Sect. 9 were persons who were naturalized in Canada before that date, British subjects who had Canadian domicile at the commencement of the Act and women lawfully admitted to Canada and married prior to Jan. 1, 1947 whose husbands would have qualified as Canadian citizens if the Act had come into force before the date of marriage. Sect. 9 was amended on June 1, 1953, so that a British subject who had his place of domicile in Canada for at least 20 years immediately before Jan. 1, 1947 need not comply with the requirements of Canadian domicile provided he was not under an order of deportation on Jan. 1, 1947.

Acquisition of Canadian Citizenship by Aliens and British Subjects.—The Act provides a means of acquiring Canadian citizenship. An alien who wishes to become a Canadian citizen must apply through his local court or through one of the special citizenship courts now being established. He must appear before the judge for a hearing; and will in due course be granted citizenship if his application is approved by the judge and by the Minister. A British subject may apply for citizenship directly to the Minister. It should be added that a minor child does not automatically acquire Canadian citizenship upon the grant of citizenship to the responsible parent.

Status of Married Women.—The Canadian Citizenship Act places no disabilities upon the married woman. She neither acquires nor does she lose Canadian citizenship by marriage. In order to acquire Canadian citizenship she must apply in exactly the same manner as does a man. There is, however, one advantage granted to her—if she is married to a Canadian citizen she may apply for citizenship after a residence of only one year in Canada.

The Canadian Citizenship Act also enables a woman married to an alien whose nationality she acquired upon marriage to divest herself of Canadian citizenship by the filing of a declaration of renunciation. Finally, it provides a means whereby a woman, who had become an alien through marriage prior to Jan. 1, 1947, may acquire the Canadian status she would otherwise have assumed on that date.

Status of Minor Children.—The minor child of a Canadian citizen other than a natural-born Canadian may receive a certificate of Canadian citizenship upon applicatio therefor by his or her responsible parent, *de facto* guardian, or mother if she has custody of the child. Provision is also made in the Citizenship Act for the granting of certificate of citizenship to a minor child in special circumstances. Provision is mad for the granting of a certificate to a person who has been adopted or legitimated in Canad and who has been admitted to Canada for permanent residence, if the adopter or the legally recognized father is a Canadian citizen.

Loss of Canadian Citizenship.—Canadian citizenship may be lost in the followin manner:—

(1) A Canadian citizen who when outside of Canada and not under disability acquires by voluntary and formal act other than marriage the nationality or citizenship of a countr other than Canada. This does not apply if the country is at war with Canada at the tim of acquisition but in such a case the Minister may order that he cease to be a Canadia citizen. The purpose of this is to hold the person, if deemed necessary, to his obligation as a Canadian.

(2) A natural-born Canadian citizen who is a dual national by birth or through naturalizatio and any Canadian citizen on marriage, may after attaining the age of 21 cease to be Canadian citizen through the making of a declaration of renunciation thereof.

(3) A Canadian citizen who under the law of another country is a national or citizen of suc country and who serves in the armed forces of such country when it is at war with Canad This does not apply if the Canadian citizen became a national or citizen of such countr when it was at war with Canada.

(4) An other-than-natural-born Canadian citizen, unless he served outside Canada in th Armed Forces of Canada in time of war or other related circumstances, or unless otherwi exempt, loses his citizenship automatically if he has resided outside of Canada for te consecutive years. The period of absence may however be extended upon request, the application is filed and granted before loss occurs and if good and sufficient reas exists.

Loss of Citizenship by Revocation—Applicable Only to Naturalized Persons.—The citizenship of a Canadian citizen other than a natural-born Canadian citizen may be revoked by the Governor in Council if, upon a report from the Minister, he is satisfied that such Canadian citizen, having been charged with the offence of treason under the Criminal Code or with an offence under the Official Secrets Act, has failed or refused to return to Canada voluntarily within such time as may be prescribed in a notice sent by the Minister to such person at his last known address and has not appeared at the preliminary inquiry into such offence or at the trial of such offence, or both as the case may be; or has obtained a certificate of naturalization or of Canadian citizenship by false representation or fraud or by concealment of material circumstances.

Doubt as to Loss of Citizenship.—Where in the opinion of the Minister a doubt exists as to whether a person has ceased to be a Canadian citizen, the Minister may refer the question to the Commission referred to in Subsection (4) of Section 19 for a ruling and the decision of the Commission or the Court, as the case may be, shall be final.

Loss of Citizenship by Revocation—Applicable to Both Natural-Born and Naturalized Persons.—The Governor in Council may in his discretion order that any person shall cease to be a Canadian citizen if, upon a report from the Minister of Citizenship and Immigration, he is satisfied that such person has, when not under a disability (1) acquired voluntarily the citizenship of a foreign country (other than by marriage), (2) taken or made an oath, affirmation, or other declaration of allegiance to a foreign country, or (3) made a declaration renouncing his Canadian citizenship.

Section 2.—Canadian Citizenship Statistics

Data on countries of allegiance and origins of the population were not collected at the 1956 Census so that the latest information available is that for the 1951 Census. Results of that census show that 96.9 p.c. of the people of Canada were Canadian citizens; that 0.7 p.c. were citizens of other Commonwealth countries; 1.7 p.c. of European countries; 0.1 p.c. of Asiatic countries; 0.5 p.c. of the United States; and 0.1 p.c. of other countries. Table 1, classifying the 1951 population by country of allegiance and origin, shows that 98.0 p.c. of the persons of British Isles origins and 99.7 p.c. of those of French origin owed allegiance to Canada. Corresponding percentages for other European and Asiatic origins were 89.3 p.c. and 78.7 p.c., respectively.

1.—Population by Country of Allegiance and Origin, 1951

Origin	Country of Allegiance					Total
	Canada	Other Commonwealth Countries	United States	European Countries	Other Countries[1]	
	No.	No.	No.	No.	No.	No.
British Isles[2]	6,577,849	95,567	34,229	1,524	516	6,709,685
French	4,304,972	763	8,370	4,896	166	4,319,167
Other European	2,279,704	6,609	22,025	229,311	16,073	2,553,722
German	586,597	631	8,203	21,739	2,825	619,995
Italian	126,767	1,640	878	22,712	248	152,245
Jewish	161,968	1,475	2,811	12,305	3,111	181,670
Netherlands	227,552	312	2,327	33,032	1,044	264,267
Polish	179,960	661	845	36,890	1,489	219,845
Russian	83,643	181	459	6,451	545	91,279
Scandinavian[3]	268,904	311	4,218	9,426	165	283,024
Ukrainian	366,160	225	305	25,069	3,284	395,043
Other	278,153	1,173	1,979	61,687	3,362	346,354
Asiatic	57,325	417	220	104	14,761	72,827
Native Indian and Eskimo	165,359	45	169	17	17	165,607
Other and not stated	182,730	670	3,987	638	396	188,421
Totals, All Origins	**13,567,939**	**104,071**	**69,000**	**236,490**	**31,929**	**14,009,429**

[1] Includes persons reported as "stateless".
[2] Includes English, Irish, Scottish, Welsh and Manx.
[3] Includes Danish, Icelandic, Norwegian and Swedish.

The following statistics show the number of citizenship certificates "issued" and more detailed information on certificates "granted" in recent years. The former, in Table **2**, include both certificates granted to new citizens and those issued for various reasons to persons who are already Canadian citizens. Tables **3** to **7** refer only to "grants" which means that the holder became a Canadian citizen by the grant of such certificate.

Citizenship Certificates Issued.—In 1959, 115,247 Canadian citizenship certificates were issued as compared with 133,560 in 1958. During 1959, the Canadian Citizenship Registration Branch recorded 5,037 certificates of registration of births abroad, 507 declarations of intention, 80 declarations of retention of Canadian citizenship and 15 petitions for resumption of Canadian citizenship. Certificates issued free to persons who had had active military service numbered 585. Corresponding figures for 1958 were 5,321 registrations of births abroad, 629 declarations of intention, 120 declarations of retention, 18 petitions for resumption and 425 certificates issued free to persons who had had active military service.

2.—Citizenship Certificates Issued, by Status of Recipient, 1957-59

Section of 1947 Act	Classification	1957	1958	1959
		No.	No.	No.
Sect. 34 (1) (i)	Certificates of Proof of Status—			
	Canadian citizens by birth	1,258	1,318	1,196
	By naturalization under former Acts	2,515	3,118	2,194
	British subjects with 5 years domicile before Jan. 1, 1947	1,312	1,527	1,101
	Women, through marriage	466	673	552
Sect. 10 (2)	British subjects with 5 years domicile after Jan. 1, 1947	7,266	8,501	7,793
Sect. 10 (1)	Aliens	73,571	58,905	49,061
Sect. 10 (5)	Minors whose parents have been granted Certificates	13,912	15,716	13,437
Sect. 11 (3)	Minors under special circumstances	85	165	195
Sect. 10 (3)	Women who regained lost Canadian citizenship through marriage	321	432	309
Sect. 10 (4)	Canadians who regained lost status by naturalization outside Canada	137	152	110
Sect. 11 (1)	Doubtful cases who now have been awarded Certificates	8	5	12
Sect. 11 (2)	Adopted and legitimated persons	170	312	363
	Replacement Certificates	1,312	1,563	1,529
	Miniature certificates of citizenship (issued since Oct. 18, 1955, to Canadian citizens)	39,582	41,173	37,395
	Totals	**141,915**	**133,560**	**115,247**

Characteristics of Persons Granted Citizenship Certificates in 1959.—Comparable detailed statistics showing the characteristics of persons granted citizenship certificates are available since 1953; such characteristics include age, marital status, occupation, period of immigration, residence and previous nationality.

Of the 71,280 persons granted citizenship in 1959, about 1 p.c. had migrated to Canada before 1921, 3 p.c. in the period 1921-40, 15 p.c. in the period 1941-50 and 80 p.c since 1950. Regionally these new citizens were distributed as follows: 1 p.c. in the Atlantic Provinces, 14 p.c. in Quebec, 60 p.c. in Ontario, 15 p.c. in the Prairie Provinces and 10 p.c. in British Columbia. Just under 83 p.c. of them resided in urban centres.

Almost 19 p.c. of the persons naturalized during 1959 had been citizens of Germany 16 p.c. had been citizens of Italy, 15 p.c. had been citizens of the Netherlands, 13 p.c had owed allegiance to a British Commonwealth country, 5 p.c. reported former allegianc to countries now parts of the U.S.S.R., and Poland was country of allegiance for 6 p.c Most of the persons designated as "stateless" were born in Poland, the U.S.S.R., Yugoslavia Hungary, Germany, Czechoslovakia and Austria.

Of the males granted citizenship certificates in 1959, 21 p.c. were employed in manufacturing and mechanical occupations, 13 p.c. were employed in construction, 10 p.c. were labourers in other than primary industries, 8 p.c. were in service, 8 p.c. were in professional occupations, 6 p.c. in agriculture, 4 p.c. in transportation and communication and 4 p.c. in proprietary and managerial occupations. Of the females granted certificates, 54 p.c. were homemakers; among those employed outside the home, 28 p.c. were in clerical occupations, 27 p.c. in manufacturing and mechanical occupations and 25 p.c. in service occupations.

3.—Persons Granted Citizenship Certificates in 1959, by Province of Residence, Rural and Urban, and Period of Immigration to Canada

Residence	Period of Immigration					Born in Canada[1]	Total
	Before 1921	1921-1930	1931-1940	1941-1950	1951-1959		
	No.	No.	No.	No.	No.	No.	No.
Rural							
Residing in Canada	**239**	**532**	**215**	**2,535**	**8,630**	**43**	**12,194**
Newfoundland	—	1	—	5	30	—	36
Prince Edward Island	—	—	—	9	18	—	27
Nova Scotia	1	—	2	34	128	1	166
New Brunswick	1	—	2	17	80	—	100
Quebec	9	20	1	96	525	—	651
Ontario	25	118	70	1,556	5,261	6	7,036
Manitoba	32	49	16	65	215	1	378
Saskatchewan	24	62	22	98	272	8	486
Alberta	118	222	76	268	640	23	1,347
British Columbia	28	57	23	381	1,384	4	1,877
Yukon and N.W.T.	1	3	3	6	77	—	90
Urban							
Residing in Canada	**698**	**1,137**	**372**	**8,411**	**48,206**	**82**	**58,906**
Newfoundland	—	1	—	7	49	—	57
Prince Edward Island	—	1	—	4	12	—	17
Nova Scotia	7	4	2	58	247	1	319
New Brunswick	3	4	2	22	98	1	130
Quebec	85	192	55	1,119	7,668	17	9,136
Ontario	212	453	168	4,901	29,902	17	35,653
Manitoba	47	80	20	491	1,533	11	2,182
Saskatchewan	34	33	17	146	683	4	917
Alberta	193	251	76	808	3,765	18	5,111
British Columbia	117	116	31	854	4,186	13	5,317
Yukon and N.W.T.	—	2	1	1	63	—	67
Rural and Urban							
Residing in Canada	**937**	**1,669**	**587**	**10,946**	**56,836**	**125**	**71,100**
Newfoundland	—	2	—	12	79	—	93
Prince Edward Island	—	1	—	13	30	—	44
Nova Scotia	8	4	4	92	375	2	485
New Brunswick	4	4	4	39	178	1	230
Quebec	94	212	56	1,215	8,193	17	9,787
Ontario	237	571	238	6,457	35,163	23	42,689
Manitoba	79	129	36	556	1,748	12	2,560
Saskatchewan	58	95	39	244	955	12	1,403
Alberta	311	473	152	1,076	4,405	41	6,458
British Columbia	145	173	54	1,235	5,570	17	7,194
Yukon and N.W.T.	1	5	4	7	140	—	157
Residing Outside Canada	**1**	—	**1**	**29**	**131**	**18**	**180**
Totals, Naturalized	**938**	**1,669**	**588**	**10,975**	**56,967**	**143**	**71,280**

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[1] Canadian-born persons who lost their citizenship by marriage; this applies to females only.

4.—Persons Granted Citizenship Certificates in 1958 and 1959, by Age Group and Sex

Age Group	1958			1959		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
0 - 4 years	50	52	102	58	44	102
5 - 9 "	2,149	1,925	4,074	1,688	1,513	3,201
10 - 14 "	3,413	3,038	6,451	3,052	2,686	5,738
15 - 19 "	2,556	2,068	4,624	2,297	1,986	4,283
20 - 24 "	3,770	2,692	6,462	3,621	2,648	6,269
25 - 29 "	6,909	4,015	10,924	6,468	3,964	10,432
30 - 34 "	8,380	6,094	14,474	7,018	4,947	11,965
35 - 39 "	6,905	4,738	11,643	5,792	4,349	10,141
40 - 44 "	4,533	2,996	7,529	3,324	2,289	5,613
45 - 49 "	3,771	2,625	6,396	2,928	2,107	5,035
50 - 54 "	2,533	2,043	4,576	1,853	1,688	3,541
55 - 59 "	1,631	1,439	3,070	1,180	1,100	2,280
60 - 64 "	1,046	888	1,934	738	651	1,389
65 - 69 "	629	513	1,142	428	389	817
70 - 74 "	295	227	522	176	139	315
75 + "	148	112	260	78	81	159
Totals, All Ages	**48,718**	**35,465**	**84,183**	**40,699**	**30,581**	**71,280**

5.—Persons Granted Citizenship Certificates in 1958 and 1959, by Occupation and Sex

Occupation	1958			1959		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
Proprietary and managerial	1,637	137	1,774	1,593	160	1,753
Professional	3,575	924	4,499	3,163	796	3,959
Clerical	1,397	2,348	3,745	1,315	2,363	3,678
Transportation and communication	1,753	49	1,802	1,536	85	1,621
Commercial and financial	1,373	265	1,638	1,321	442	1,763
Service	4,204	2,112	6,316	3,188	2,090	5,278
Agricultural	2,838	52	2,890	2,099	55	2,154
Fishing, trapping, logging	366	—	366	287	—	287
Mining	915	—	915	612	—	612
Manufacturing and mechanical	11,138	2,384	13,522	8,750	2,290	11,040
Construction	5,493	27	5,520	5,393	7	5,400
Labourers, not in primary industries	4,953	19	4,972	4,069	20	4,089
Homemakers	—	20,037	20,037	—	16,408	16,408
No occupation (including students, retired, etc.)	2,150	1,197	3,347	2,213	1,299	3,512
Children under 14 years of age	5,111	4,576	9,687	4,398	3,875	8,273
Not stated[1]	1,815	1,338	3,153	762	691	1,453
Totals, All Occupations	**48,718**	**35,465**	**84,183**	**40,699**	**30,581**	**71,280**

[1] Mainly children over 14 years of age.

6.—Persons Granted Citizenship Certificates in 1958 and 1959, by Country of Birth and Sex

Country of Birth	1958			1959		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
Argentina	22	15	37	19	27	46
Australia	63	38	101	55	34	89
Austria	1,131	1,001	2,132	1,163	924	2,087
Belgium	612	508	1,120	501	438	939
British Guiana	53	48	101	52	37	89
Bulgaria	87	15	102	39	12	51
Canada	62	360	422	49	234	283
China	1,400	774	2,174	847	523	1,370
Czechoslovakia	1,017	763	1,780	619	473	1,092
Denmark	801	416	1,217	546	302	848
Egypt	69	52	121	49	52	101
Finland	527	503	1,030	451	425	876
France	929	587	1,51[illegible]	737	409	1,146
Germany	6,174	5,303	11,477	6,055	5,231	11,286

6.—Persons Granted Citizenship Certificates in 1958 and 1959, by Country of Birth and Sex—concluded

Country of Birth	1958			1959		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
Greece	779	490	1,269	755	513	1,268
Hong Kong	27	27	54	28	26	54
Hungary	1,052	783	1,835	650	545	1,195
India	163	102	265	144	89	233
Indonesia	44	28	72	66	49	115
Ireland, Republic of	393	212	605	523	351	874
Israel	155	149	304	77	75	152
Italy	7,431	3,691	11,122	7,398	4,037	11,435
Japan	51	83	134	53	70	123
Lebanon	78	52	130	74	49	123
Malta	89	19	108	63	24	87
Netherlands	6,153	4,707	10,860	5,613	4,534	10,147
Netherlands East Indies	40	27	67	36	25	61
Norway	308	169	477	239	117	356
Poland	4,980	3,663	8,643	3,033	2,336	5,369
Portugal	46	6	52	144	17	161
Romania	928	781	1,709	639	569	1,208
South Africa	45	30	75	57	35	92
Spain	89	46	135	49	27	76
Sweden	211	138	349	133	122	255
Switzerland	414	204	618	345	179	524
Turkey	40	39	79	54	32	86
Union of Soviet Socialist Republics	5,113	4,205	9,318	3,190	2,751	5,941
United Kingdom	4,354	3,486	7,840	3,810	3,171	6,981
United States	726	427	1,153	630	379	1,009
West Indies	179	118	297	145	126	271
Yugoslavia	1,502	1,118	2,620	1,235	972	2,207
Other	381	282	663	334	240	574
Totals, All Countries	**48,718**	**35,465**	**84,183**	**40,699**	**30,581**	**71,280**
Commonwealth	5,129	4,282	9,411	4,527	3,845	8,372
Other Europe	40,733	29,333	70,066	34,092	25,298	59,390
Other Asia	1,905	1,229	3,134	1,278	884	2,162
United States	726	427	1,153	630	379	1,009
Other	225	194	419	172	175	347

7.—Persons Granted Citizenship Certificates in 1959, by Country of Former Allegiance and Period of Immigration to Canada

Country of Former Allegiance	Period of Immigration						Born in Canada	Total
	Before 1921	1921-1930	1931-1940	1941-1950	1951-1955	1956-1959		
	No.	No.	No.	No.	No.	No.	No.	No.
Commonwealth countries	21	24	33	2,764	6,510	216	3	9,571
Austria	41	32	4	70	1,834	29	5	2,015
Belgium	17	20	9	137	578	14	1	776
Bulgaria	3	—	—	4	42	2	—	51
China	203	25	1	39	584	459	7	1,318
Czechoslovakia	1	88	70	128	386	8	1	682
Denmark	8	59	1	72	703	9	4	856
Estonia	1	1	—	348	574	2	—	926
Finland	5	137	6	37	683	8	5	881
France	19	6	4	94	919	25	2	1,069
Germany	20	93	27	647	12,337	252	11	13,387
Greece	5	7	3	89	1,173	69	3	1,349
Hungary	3	90	32	137	644	63	2	971
Ireland, Republic of	—	—	—	4	30	1	—	35
Israel	—	—	—	5	599	27	—	631
Italy	21	39	10	810	9,809	785	10	11,484
Japan	32	34	16	—	14	18	6	120
Latvia	—	3	—	328	646	6	—	983
Lebanon	1	—	1	3	115	5	—	125
Lithuania	2	21	2	303	256	4	—	588
Netherlands	6	25	9	1,538	8,761	52	4	10,395
Norway	18	76	1	37	224	3	9	368
Poland	51	310	103	1,711	2,402	80	21	4,678
Portugal	—	—	—	—	147	11	—	158

7.—Persons Granted Citizenship Certificates in 1959, by Country of Former Allegiance and Period of Immigration to Canada—concluded

Country of Former Allegiance	Period of Immigration						Born in Canada	Total
	Before 1921	1921-1930	1931-1940	1941-1950	1951-1955	1956-1959		
	No.	No.	No.	No.	No.	No.	No.	No.
Romania	23	32	11	108	422	13	6	615
Spain	3	—	—	—	79	4	—	86
Sweden	15	33	1	24	86	2	6	167
Switzerland	5	37	7	44	424	15	2	534
United States	312	187	121	202	236	86	21	1,165
Union of Soviet Socialist Republics	97	238	85	1,094	1,674	18	9	3,215
Yugoslavia	2	50	30	166	1,452	104	2	1,806
Other	3	2	1	32	204	30	3	275
Totals, All Countries	**938**	**1,669**	**588**	**10,975**	**54,547**	**2,420**	**143**	**71,280**

CHAPTER V.—VITAL STATISTICS*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Vital statistics provide a record of population development—a measure of the pace of growth, marriage and fertility trends, the distribution of people in and entering the various age groups, the relative importance of each of the causes of death, and so on. The continuity of such data gives a constant guide to the planning, operation and evaluation of a variety of national activities, particularly in the fields of public health, education, community planning and various types of business enterprise.

This Chapter gives a fairly detailed coverage of the vital statistics information available, gives life tables for males and females and presents a comparison of the principal Canadian vital statistics rates with those of other countries. In making international and interprovincial comparisons of birth, death and marriage rates, it is important to note that part of the differences observed over a period of years as between countries, provinces or local areas may be caused by differences in the sex and age distribution of the populations involved. Similarly, rates for any one area may be affected by changes in such distribution.

The population data upon which vital statistics rates are computed are given in Chapter III, in DBS census bulletins, and in reports on intercensal estimates of population. Births and deaths are classified by place of residence (births according to the residence of the mother) and marriages by place of occurrence.

The history of the collection of vital statistics in Canada is covered in the 1948-49 Year Book, pp. 185-188. Detailed information is given in *Vital Statistics* (Preliminary Report) (Catalogue No. 84-201), *Vital Statistics of Canada* (Catalogue No. 84-202) and in other regular and special reports; in addition, certain unpublished data are available on request.

Section 1.—Summary of Vital Statistics

Table **1** gives a summary of the principal vital statistics of the provinces of Canada from 1936 to 1959 and Table **2** shows certain vital statistics for urban centres having at least 10,000 population at the date of the 1956 Census. Corresponding data for 1921—when the collection of national vital statistics was initiated—to 1935 are shown in previous issues of the Canada Year Book.

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* Revised in the Vital Statistics Section, Health and Welfare Division, Dominion Bureau of Statistics.

1.—Summary of Principal Vital Statistics, by Province, 1936-59

NOTE.—Figures for the years 1921, when the collection of national statistics was initiated, to 1935 are given in previous editions of the Year Book.

Province and Year	Live Births		Deaths		Natural Increase[1]		Infant Mortality[2]		Maternal Mortality		Marriages	
	No.	Rate[3]	No.	Rate[3]	No.	Rate[3]	No.	Rate[4]	No.	Rate[4]	No.	Rate[3]
Newfoundland—												
Av. 1936-40......	7,638	25.8	3,681	12.4	3,957	13.4	754	99	40	5.3	2,208	7.5
" 1941-45......	9,292	29.8	3,681	11.8	5,611	18.0	852	92	39	4.2	2,967	9.5
" 1946-50......	12,352	36.2	3,179	9.3	9,173	26.9	754	61	25	2.0	2,711	8.0
" 1951-55......	13,101	34.1	2,926	7.6	10,175	26.5	598	46	24	1.8	2,836	7.4
1956..............	14,541	35.0	3,058	7.4	11,483	27.6	630	43	23	1.6	3,073	7.4
1957..............	15,315	36.0	3,198	7.5	12,117	28.5	604	39	20	1.3	3,041	7.1
1958..............	14,815	33.8	3,122	7.1	11,693	26.7	572	39	14	0.9	3,047	7.0
1959..............	14,826	33.0	3,179	7.1	11,647	25.9	576	39	12	0.8	2,893	6.4
P. E. Island—												
Av. 1936-40......	2,054	21.9	1,080	11.5	974	10.4	142	69	10	4.9	623	6.6
" 1941-45......	2,180	23.7	964	10.5	1,216	13.2	114	52	9	3.9	686	7.5
" 1946-50......	2,869	30.5	922	9.8	1,947	20.7	114	40	4	1.3	677	7.2
" 1951-55......	2,720	27.2	923	9.2	1,797	18.0	88	32	2	0.8	623	6.2
1956..............	2,657	26.8	933	9.4	1,724	17.4	105	40	1	0.4	649	6.6
1957..............	2,676	27.0	916	9.3	1,760	17.7	75	28	2	0.7	627	6.3
1958..............	2,581	25.8	949	9.5	1,632	16.3	84	33	1	0.4	619	6.2
1959..............	2,720	26.7	1,007	9.9	1,713	16.8	85	31	—	—	639	6.3
Nova Scotia—												
Av. 1936-40......	12,060	21.7	6,126	11.0	5,934	10.7	782	65	48	4.0	4,796	8.6
" 1941-45......	15,146	25.2	6,326	10.5	8,820	14.7	870	57	41	2.7	6,302	10.5
" 1946-50......	17,994	28.9	6,042	9.7	11,952	19.2	760	42	22	1.2	5,525	8.9
" 1951-55......	18,246	27.5	5,802	8.8	12,444	18.7	586	32	13	0.7	5,283	8.0
1956..............	19,106	27.5	5,738	8.3	13,368	19.2	554	29	6	0.3	5,543	8.0
1957..............	19,316	27.5	5,977	8.5	13,339	19.0	526	27	13	0.7	5,206	7.4
1958..............	18,898	26.6	6,120	8.6	12,778	18.0	557	29	14	0.7	5,135	7.2
1959..............	19,038	26.6	6,371	8.9	12,667	17.7	591	31	8	0.4	5,310	7.4
New Brunswick—												
Av. 1936-40......	11,105	25.1	5,040	11.4	6,065	13.7	913	82	54	4.9	3,801	8.6
" 1941-45......	13,037	28.2	5,050	10.9	7,987	17.3	960	74	42	3.2	4,433	9.6
" 1946-50......	16,878	34.0	4,886	9.8	11,992	24.2	1,015	60	23	1.4	4,864	9.8
" 1951-55......	16,496	31.0	4.576	8.6	11,920	22.4	717	43	16	0.9	4,306	8.1
1956..............	16,573	29.9	4,658	8.4	11,915	21.5	656	40	9	0.5	4,591	8.3
1957..............	17,020	30.1	4,595	8.1	12,425	22.0	589	35	5	0.3	4,284	7.6
1958..............	16,414	28.4	4,528	7.8	11,886	20.6	568	35	8	0.5	4,170	7.2
1959..............	16,486	27.9	4,747	8.0	11,739	19.9	536	33	6	0.4	4,310	7.3
Quebec—												
Av. 1936-40......	78,509	24.6	33,221	10.4	45,288	14.2	6,470	82	400	5.1	27,111	8.5
" 1941-45......	97,906	28.4	34,273	9.9	63,633	18.5	6,690	68	318	3.2	33,126	9.6
" 1946-50......	115,496	30.4	33,723	8.9	81,773	21.5	6,205	54	227	2.0	34,874	9.2
" 1951-55......	128,523	30.0	34,269	8.0	94,254	22.0	5,662	44	149	1.2	35,584	8.3
1956..............	135,884	29.4	35,042	7.6	100,842	21.8	5,544	41	125	0.9	37,290	8.1
1957..............	141,707	29.8	36,234	7.6	105,473	22.2	5,412	38	115	0.8	37,135	7.8
1958..............	141,396	29.0	35,774	7.3	105,622	21.7	5,152	36	95	0.7	36,229	7.4
1959..............	142,383	28.5	36,390	7.3	105,993	21.2	4,735	33	104	0.7	37,124	7.4
Ontario—												
Av. 1936-40......	64,461	17.5	37,794	10.3	26,668	7.2	3,196	50	291	4.5	32,719	8.9
" 1941-45......	77,738	19.9	39,738	10.2	38,000	9.7	3,276	42	197	2.5	38,042	9.7
" 1946-50......	105,161	24.6	42,214	9.9	62,947	14.7	3,795	36	129	1.2	44,084	10.3
" 1951-55......	128,861	26.1	44,715	9.0	84,146	17.1	3,634	28	83	0.6	45,213	9.1
1956..............	143,516	26.6	47,231	8.7	96,285	17.9	3,610	25	70	0.5	46,282	8.6
1957..............	150,920	26.8	49,164	8.7	101,756	18.1	3,776	25	55	0.4	46,780	8.3
1958..............	152,637	26.3	48,677	8.4	103,960	17.9	3,801	25	70	0.5	46,894	8.1
1959..............	157,124	26.4	50,600	8.5	106,524	17.9	3,773	24	73	0.5	46,598	7.8
Manitoba—												
Av. 1936-40......	13,515	18.8	6,136	8.5	7,379	10.3	773	57	54	4.0	6,931	9.6
" 1941-45......	15,831	21.8	6,633	9.1	9,198	12.7	814	51	41	2.6	7,295	10.0
" 1946-50......	19,325	25.9	6,702	9.0	12,623	16.9	810	42	24	1.3	7,605	10.2
" 1951-55......	21,321	26.4	6,775	8.4	14,546	18.0	675	32	15	0.7	7,104	8.8
1956..............	21,945	25.8	7,058	8.3	14,887	17.5	676	31	6	0.3	6,709	7.9
1957..............	22,362	26.0	7,368	8.6	14,994	17.4	711	32	10	0.4	6,594	7.7
1958..............	21,697	24.9	7,145	8.2	14,552	16.7	656	30	12	0.6	6,430	7.4
1959..............	22,801	25.8	7,421	8.4	15,380	17.4	615	27	14	0.6	6,661	7.5

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[1] Excess of births over deaths. [2] Deaths under one year of age. [3] Per 1,000 population. [4] Per 1,000 live births.

1.—Summary of Principal Vital Statistics, by Province, 1936-59—concluded

Province or Territory and Year	Live Births		Deaths		Natural Increase[1]		Infant Mortality[2]		Maternal Mortality		Marriages	
	No.	Rate[3]	No.	Rate[3]	No.	Rate[3]	No.	Rate[4]	No.	Rate[4]	No.	Rate[3]
Saskatchewan—												
Av. 1936-40	18,675	20.4	6,366	7.0	12,310	13.4	1,025	55	68	3.6	6,599	7.2
" 1941-45	18,444	21.7	6,437	7.6	12,007	14.1	858	47	52	2.8	6,541	7.7
" 1946-50	21,907	26.3	6,473	7.8	15,434	18.5	883	40	29	1.3	7,413	8.9
" 1951-55	23,554	27.5	6,547	7.6	17,007	19.9	743	32	16	0.7	6,876	8.0
1956	24,059	27.3	6,666	7.6	17,393	19.7	680	28	8	0.3	6,403	7.3
1957	23,921	27.2	6,743	7.7	17,178	19.5	609	25	5	0.2	6,510	7.4
1958	23,843	26.9	6,483	7.3	17,360	19.6	616	26	13	0.5	6,464	7.3
1959	24,319	27.0	7,003	7.8	17,316	19.2	626	26	10	0.4	6,388	7.1
Alberta—												
Av. 1936-40	16,282	20.8	6,054	7.7	10,228	13.1	869	53	73	4.5	7,192	9.2
" 1941-45	18,845	23.7	6,355	8.0	12,490	15.7	827	44	46	2.4	7,977	10.0
" 1946-50	24,290	28.4	6,814	8.0	17,476	20.4	889	37	25	1.0	9,090	10.6
" 1951-55	31,087	30.6	7,527	7.4	23,560	23.2	894	29	15	0.5	9,750	9.6
1956	34,951	31.1	7,786	6.9	27,165	24.2	860	25	14	0.4	9,965	8.9
1957	35,718	30.8	8,255	7.1	27,463	23.7	963	27	12	0.3	10,117	8.7
1958	36,842	30.7	8,237	6.9	28,605	23.8	932	25	17	0.5	10,186	8.5
1959	38,080	30.6	8,481	6.8	29,599	23.8	922	24	14	0.4	10,402	8.4
British Columbia—												
Av. 1936-40	12,106	15.6	7,697	9.9	4,408	5.7	532	44	46	3.8	7,053	9.1
" 1941-45	17,705	19.8	9,368	10.5	8,337	9.3	684	39	46	2.6	9,535	10.7
" 1946-50	25,859	24.0	10,992	10.2	14,867	13.9	868	34	31	1.2	11,564	10.7
" 1951-55	31,347	25.1	12,233	9.8	19,114	15.3	856	27	17	0.5	11,131	8.9
1956	36,241	25.9	13,415	9.6	22,826	16.3	944	26	13	0.4	11,950	8.5
1957	38,744	26.1	13,711	9.2	25,033	16.9	1,096	28	15	0.4	12,620	8.5
1958	39,577	25.6	13,741	8.9	25,836	16.7	1,077	27	15	0.4	12,094	7.8
1959	39,971	25.5	14,336	9.1	25,635	16.4	994	25	17	0.4	11,910	7.6
Yukon Territory—												
Av. 1936-40	69	13.8	73	14.6	−4	−0.8	7	102	1	8.7	36	7.2
" 1941-45	105	21.0	96	19.3	9	1.7	11	101	1	5.7	60	12.1
" 1946-50	254	31.7	91	11.4	163	20.3	16	63	--	1.6	73	9.1
" 1951-55	413	43.0	90	9.4	323	33.6	22	53	--	0.5	94	9.8
1956	481	40.1	85	7.1	396	33.0	23	48	—	—	112	9.3
1957	494	41.2	93	7.8	401	33.4	27	55	1	2.0	110	9.2
1958	473	36.4	92	7.1	381	29.3	20	42	—	—	109	8.4
1959	537	41.3	89	6.8	448	34.5	14	26	—	—	109	8.4
Northwest Territories—												
Av. 1936-40	228	20.0	177	15.5	51	4.5	29	125	2	10.5	72	6.3
" 1941-45	383	31.9	332	27.7	51	4.2	72	189	2	4.7	95	7.9
" 1946-50	626	39.1	372	23.2	254	15.9	87	139	3	5.4	139	8.7
" 1951-55	666	40.1	284	17.1	382	23.0	78	117	2	3.6	115	6.9
1956	785	41.3	291	15.3	494	26.0	117	149	3	3.8	146	7.7
1957	900	47.4	325	17.1	575	30.3	129	143	2	2.2	162	8.5
1958	945	47.3	333	16.7	612	30.6	143	151	4	4.2	148	7.4
1959	990	47.1	289	13.8	701	33.3	128	129	5	5.1	130	6.2
Canada—[5]												
Av. 1936-40	**229,064**	**20.5**	**109,764**	**9.8**	**119,300**	**10.7**	**14,737**	**64**	**1,046**	**4.6**	**96,931**	**8.7**
" 1941-45	**277,320**	**23.5**	**115,572**	**9.8**	**161,748**	**13.7**	**15,176**	**55**	**793**	**2.9**	**114,091**	**9.7**
" 1946-50	**355,748**	**27.4**	**120,438**	**9.3**	**235,310**	**18.1**	**15,723**	**44**	**527**	**1.5**	**126,898**	**9.8**
" 1951-55	**416,334**	**28.0**	**126,666**	**8.5**	**289,668**	**19.5**	**14,552**	**35**	**353**	**0.8**	**128,915**	**8.7**
1956	**450,739**	**28.0**	**131,961**	**8.2**	**318,778**	**19.8**	**14,399**	**32**	**278**	**0.6**	**132,713**	**8.3**
1957	**469,093**	**28.3**	**136,579**	**8.2**	**332,514**	**20.1**	**14,517**	**31**	**255**	**0.5**	**133,186**	**8.0**
1958	**470,118**	**27.6**	**135,201**	**7.9**	**334,917**	**19.7**	**14,178**	**30**	**263**	**0.6**	**131,525**	**7.7**
1959	**479,275**	**27.5**	**139,913**	**8.0**	**339,362**	**19.5**	**13,595**	**28**	**263**	**0.5**	**132,474**	**7.6**

[1] Excess of births over deaths. [2] Deaths under one year of age. [3] Per 1,000 population. [4] Per 1,000 live births. [5] Figures for Newfoundland are included from 1949 only.

2.—Summary of Principal Vital Statistics for Incorporated Urban Centres of 10,000 Population or Over,[1] Average 1951-55 and 1959

NOTE.—Urban centres are designated in this table by the following abbreviations: c.=city, t.=town, vl.=village, s.m.=suburban municipality, and d.m.=district municipality.

Province and Urban Centre	Live Births		Deaths		Natural Increase		Infant Mortality			Marriages[2]	
	Av. 1951-55	1959	Av. 1951-55	1959	Av. 1951-55	1959	Av. 1951-55	1959		Av. 1951-55	1959
	No.	No.	No.	No.	No.	No.	Rate[3]	No.	Rate[3]	No.	No.
Newfoundland—											
Corner Brook, c.	735	799	90	121	645	678	33	27	34	211	159
St. John's, c.	1,878	1,945	507	572	1,371	1,373	40	69	35	692	615
Prince Edward Island—											
Charlottetown, c.	477	452	206	208	271	244	30	11	24	176	178
Nova Scotia—											
Amherst, t.	263	278	109	100	154	178	39	9	32	117	121
Dartmouth, t.	633	898	103	142	530	756	18	19	21	188	171
Glace Bay, t.	687	642	220	222	467	420	46	27	42	170	176
Halifax, c.	2,482	2,447	725	751	1,757	1,696	24	69	28	1,183	1,113
New Waterford, t.	369	355	87	80	282	275	50	9	25	95	81
Sydney, c.	1,063	926	246	300	817	626	23	17	18	317	284
Truro, t.	299	319	94	107	205	212	23	15	47	162	150
New Brunswick—											
Edmundston, c.	398	374	68	76	330	298	36	4	11	107	81
Fredericton, c.	453	496	153	167	300	329	32	17	34	244	272
Lancaster, c.	..	235	..	98	..	137	..	9	38	..	58
Moncton, c.	775	1,124	218	284	557	840	29	22	20	360	341
Saint John, c.	1,499	1,423	556	601	943	822	27	32	22	548	538
Quebec—											
Alma, t.	391	524	58	73	333	451	50	25	48	92	117
Arvida, c.	389	401	46	31	343	370	43	1	2	70	77
Cap de la Madeleine, c.	680	731	127	161	553	570	34	19	26	166	203
Chicoutimi, c.	1,041	1,006	197	201	844	805	54	40	40	241	199
Dorval, c.	265	390	43	63	222	327	23	12	31	25	38
Drummondville, c.	548	713	138	190	410	523	55	29	41	158	263
Granby, c.	854	890	176	188	678	702	33	23	26	257	241
Grand'Mère, c.	406	441	83	93	323	348	38	8	18	108	93
Hull, c.	1,586	1,810	413	408	1,173	1,402	60	79	44	460	444
Jacques Cartier, c.	1,051	1,217	186	209	865	1,008	55	39	32	149	196
Joliette, c.	470	495	164	160	306	335	40	15	30	170	174
Jonquière, c.	943	973	148	148	795	825	46	34	35	187	241
Kénogami, t.	402	375	59	47	343	328	35	6	16	87	69
Lachine, c.	777	914	234	274	543	640	28	28	31	267	260
LaSalle, t.	480	938	87	163	393	775	27	16	17	77	115
La Tuque, t.	315	439	65	82	250	357	32	25	57	82	65
Lauzon, c.	263	264	79	99	184	165	56	13	49	76	75
Laval des Rapides, t.	193	524	41	97	152	427	36	13	25	19	48
Lévis, c.	338	326	118	113	220	213	57	12	37	96	94
Longueuil, c.	391	440	106	103	285	337	40	9	20	108	123
Magog, c.	404	320	101	76	303	244	36	10	31	105	119
Montreal, c.	27,847	29,640	9,937	10,475	17,910	19,165	32	804	27	11,143	11,215
Montreal North, t.	546	1,346	107	226	439	1,120	42	38	28	99	157
Mount Royal, t.	237	301	73	108	164	193	19	5	17	82	157
Noranda, c.	366	347	50	51	316	296	34	10	29	88	89
Outremont, c.	302	337	275	286	27	51	24	12	36	325	257
Pointe aux Trembles, t.	289	592	108	144	181	448	121	22	37	66	84
Pointe Claire, t.	284	454	63	112	221	342	18	8	18	58	81
Quebec, c.	4,316	4,191	1,630	1,637	2,686	2,554	62	189	45	1,756	1,633
Rimouski, t	448	573	82	90	366	483	50	12	21	98	109
Rouyn, c.	595	697	100	102	495	595	48	28	40	104	115
Ste. Foy, c.	304	778	38	93	266	685	27	10	13	26	67
St. Hyacinthe, c.	543	505	248	242	295	263	32	21	42	212	204
St. Jean, c.	671	758	168	162	503	596	38	16	21	202	209
St. Jérôme, c.	596	661	134	156	462	505	49	22	33	199	243
St. Lambert, c.	219	275	82	99	137	176	27	3	11	59	86
St. Laurent, c.	886	1,123	163	249	723	874	23	27	24	151	213
St. Michel, c.	553	1,945	76	195	477	1,750	27	47	24	74	141
Shawinigan Falls, c.	866	836	179	169	687	667	37	24	29	242	233
Shawinigan South, vl.	311	307	40	51	271	256	32	7	23	62	52

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[1] As at the 1956 Census; residents only.

[2] By place of occurrence.

[3] Per 1,000 live births.

2.—Summary of Principal Vital Statistics for Incorporated Urban Centres of 10,000 Population or Over,[1] Average 1951-55 and 1959—continued

Province and Urban Centre	Live Births		Deaths		Natural Increase		Infant Mortality			Marriages[2]	
	Av. 1951-55	1959	Av. 1951-55	1959	Av. 1951-55	1959	Av. 1951-55	1959		Av. 1951-55	1959
	No.	No.	No.	No.	No.	No.	Rate[3]	No.	Rate[3]	No.	No.
Quebec—concluded											
Sherbrooke, c.	1,751	1,779	463	528	1,288	1,251	41	48	27	537	571
Sillery, c.	266	287	63	77	203	210	30	11	38	51	80
Sorel, c.	510	459	137	148	373	311	52	19	41	134	108
Thetford Mines, c.	574	692	126	139	448	553	46	24	35	149	166
Trois Rivières, c.	1,440	1,467	389	408	1,051	1,059	46	43	29	433	457
Valleyfield, c.	725	850	190	211	535	639	47	33	39	219	261
Verdun, c.	1,807	1,840	587	610	1,220	1,230	22	40	22	704	571
Victoriaville, t.	476	492	147	154	329	338	73	22	45	135	148
Westmount, c.	264	239	287	250	−23	−11	30	6	25	451	389
Ontario—											
Barrie, t.	432	567	137	166	295	401	25	14	25	184	212
Belleville, c.	540	725	195	250	345	475	29	19	26	254	255
Brampton, t.	254	427	94	114	160	313	28	11	26	114	144
Brantford, c.	989	1,189	409	489	580	700	28	26	22	458	418
Brockville, t.	308	379	145	177	163	202	40	9	24	148	164
Chatham, c.	569	734	223	294	346	440	31	12	16	298	285
Cornwall, c.	507	1,365	166	363	341	1,002	32	59	43	247	380
Eastview, t.	619	1,051	91	124	528	927	34	20	19	146	180
Forest Hill, vl.	232	228	107	157	125	71	15	5	22	27	13
Fort William, c.	991	1,108	319	344	672	764	21	23	21	411	361
Galt, c.	494	571	200	226	294	345	22	13	23	213	201
Guelph, c.	775	995	309	318	466	677	30	22	22	339	346
Hamilton, c.	5,682	6,528	2,014	2,297	3,668	4,231	28	138	21	2,545	2,358
Kenora, t.	255	291	74	105	181	186	26	6	21	110	87
Kingston, c.	1,182	1,377	448	498	734	879	31	29	21	474	525
Kitchener, c.	1,437	1,804	405	541	1,032	1,263	21	38	21	617	570
Leaside, t.	288	219	101	124	187	95	18	3	14	100	87
Lindsay, t.	228	237	129	134	99	103	37	8	34	116	107
London, c.	2,428	2,504	1,074	1,127	1,354	1,377	26	72	29	1,206	1,348
Long Branch, vl.	251	332	52	85	199	247	21	9	27	116	89
Mimico, t.	308	478	107	134	201	344	18	12	25	146	195
New Toronto, t.	233	378	81	108	152	270	13	9	24	114	72
Niagara Falls, c.	595	525	233	219	362	306	30	13	25	488	343
North Bay, c.	558	717	182	167	376	550	32	15	21	281	271
Orillia, t.	375	390	134	176	241	214	34	6	15	146	120
Oshawa, c.	1,239	1,624	325	363	914	1,261	30	32	20	449	486
Ottawa, c.	5,325	6,100	2,006	2,237	3,319	3,863	31	151	25	2,130	2,201
Owen Sound, c.	412	404	187	166	225	238	32	7	17	195	145
Pembroke, t.	430	546	129	149	301	397	47	11	20	176	176
Peterborough, c.	1,104	1,166	349	393	755	773	25	29	25	380	377
Port Arthur, c.	956	1,101	347	393	609	708	25	20	18	389	403
Port Colborne, t.	360	366	101	124	259	242	32	13	36	131	133
Riverside, t.	336	440	72	98	264	342	22	7	16	63	72
St. Catharines, c.	903	909	369	440	534	469	23	26	29	582	546
St. Thomas, c.	405	435	233	249	172	186	24	11	25	200	212
Sarnia, c.	1,188	1,471	291	346	897	1,125	32	35	24	365	344
Sault Ste. Marie, c.	1,014	1,169	292	295	722	874	25	22	19	448	521
Stratford, c.	432	439	218	233	214	206	28	13	30	161	162
Sudbury, c.	1,623	1,543	303	357	1,320	1,186	34	38	25	660	624
Timmins, t.	821	826	202	234	619	592	38	35	42	271	235
Toronto, c.	14,750	16,358	7,630	7,403	7,120	8,955	25	392	24	11,705	11,745
Trenton, t.	366	463	89	92	277	371	32	10	22	134	150
Waterloo, c.	368	528	96	135	272	393	18	13	25	127	140
Welland, c.	427	389	118	156	309	233	23	7	18	294	243
Windsor, c.	3,110	2,608	1,105	1,229	2,005	1,379	30	61	23	1,585	1,178
Woodstock, c.	390	487	167	182	223	305	19	11	23	175	178
Manitoba—											
Brandon, c.	555	704	201	250	354	454	26	16	23	287	224
Flin Flon, t.	367	333	47	38	320	295	27	7	21	90	87
Fort Garry, s.m.	..	453	..	80	..	373	..	14	31	..	64
Kildonan East, c.	..	625	..	134	..	491	..	16	26	..	112
Kildonan West, s.m.	..	392	..	93	..	299	..	2	5	..	66
Portage la Prairie, c.	263	365	93	102	170	263	31	7	19	129	107
St. Boniface, c.	753	1,050	209	314	544	736	27	17	16	280	281
St. James, c.	..	740	..	210	..	530	..	12	16	..	221

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[1] As at the 1956 Census; residents only. [2] By place of occurrence. [3] Per 1,000 live births.

2.—Summary of Principal Vital Statistics for Incorporated Urban Centres of 10,000 Population or Over,[1] Average 1951-55 and 1959—concluded

Province and Urban Centre	Live Births		Deaths		Natural Increase		Infant Mortality			Marriages[2]	
	Av. 1951-55	1959	Av. 1951-55	1959	Av. 1951-55	1959	Av. 1951-55	1959		Av. 1951-55	1959
	No.	No.	No.	No.	No.	No.	Rate[3]	No.	Rate[3]	No.	No.
Manitoba—concluded											
St. Vital, s.m.	..	609	..	155	..	454	..	12	20	..	100
Winnipeg, c.	5,766	6,226	2,408	2,722	3,358	3,504	26	157	25	3,350	2,797
Saskatchewan—											
Moose Jaw, c.	774	945	287	376	487	569	27	26	28	365	277
Prince Albert, c.	558	675	133	173	425	502	29	16	24	279	281
Regina, c.	2,143	3,104	589	735	1,554	2,369	23	53	17	1,039	992
Saskatoon, c.	1,811	2,661	529	649	1,282	2,012	28	58	22	872	925
Swift Current, c.	275	375	77	122	198	253	33	15	40	133	127
Alberta—											
Calgary, c.	4,462	7,259	1,304	1,596	3,158	5,663	27	176	24	2,015	2,230
Edmonton, c.	6,481	8,604	1,346	1,730	5,135	6,874	23	172	20	2,823	3,229
Jasper Place, t.	442	1,099	37	78	405	1,021	18	13	12	16	23
Lethbridge, c.	816	913	195	261	621	652	25	17	19	406	385
Medicine Hat, c.	464	602	173	207	291	395	20	15	25	283	274
Red Deer, c.	358	634	73	116	285	518	23	11	17	173	212
British Columbia—											
Burnaby, d.m.	..	2,561	..	752	..	1,809	..	56	22	..	547
Chilliwack, d.m.	..	457	..	155	..	302	..	10	22	..	122
Coquitlam, d.m.	..	676	..	129	..	547	..	13	19	..	58
Esquimalt, d.m.	..	310	..	69	..	241	..	5	16	..	136
Langley, d.m.	..	331	..	150	..	181	..	9	27	..	56
Maple Ridge, d.m.	..	374	..	149	..	225	..	11	29	..	94
Matsqui, d.m.	..	297	..	105	..	192	..	9	30	..	78
Nanaimo, c.	331	433	151	172	180	261	25	6	14	208	209
New Westminster, c.	584	650	272	337	312	313	19	15	23	574	552
North Vancouver, c.	647	632	190	189	457	443	19	10	16	152	149
North Vancouver, d.m.	..	949	..	189	..	760	..	15	16	..	95
Oak Bay, d.m.	..	174	..	188	..	−14	..	1	6	..	70
Penticton, c.	247	247	89	120	158	127	32	5	20	107	129
Port Alberni, c.	255	320	56	64	199	256	25	4	13	92	72
Prince George, c.	370	594	69	65	301	529	33	11	19	154	223
Prince Rupert, c.	302	416	95	101	207	315	41	9	22	135	116
Richmond, d.m.	..	1,226	..	207	..	1,019	..	24	20	..	116
Saanich, d.m.	..	1,108	..	417	..	691	..	15	14	..	133
Surrey, d.m.	..	1,900	..	472	..	1,428	..	35	18	..	219
Trail, c.	380	303	74	73	306	230	21	5	17	115	98
Vancouver, c.	7,738	8,231	4,223	4,602	3,515	3,629	22	151	18	4,587	4,515
Victoria, c.	1,159	1,240	768	868	391	372	21	26	21	777	696
West Vancouver, d.m.	..	412	..	191	..	221	..	12	29	..	138

[1] As at the 1956 Census; residents only. [2] By place of occurrence. [3] Per 1,000 live births.

Section 2.—Births*

The Canadian birth rate in 1921 was 29 per 1,000 population. As a rate of 35 is very high for countries of modern western civilization, the Canadian rate had probably not fallen far, nor for long, before 1921. It fell continuously until 1937 when it reached a low of 20 but, as a result of economic recovery and the War, it rose to 22 in 1940, 24 in 1943 and nearly 29 in 1947. Since then it has fluctuated between 27 and 28.5; in 1959 it stood at 27.5.

The birth rates in most provinces followed similar trends but there were some regional differences in the birth rate pattern in recent years. Although all provinces had record high rates immediately following World War II, average birth rates in Ontario and the western provinces were higher during 1951-55 than those for the 1946-50 period, while those for Quebec and the Maritimes were lower. In fact, Ontario, British Columbia and Alberta had record high crude birth rates during the 1956-59 period.

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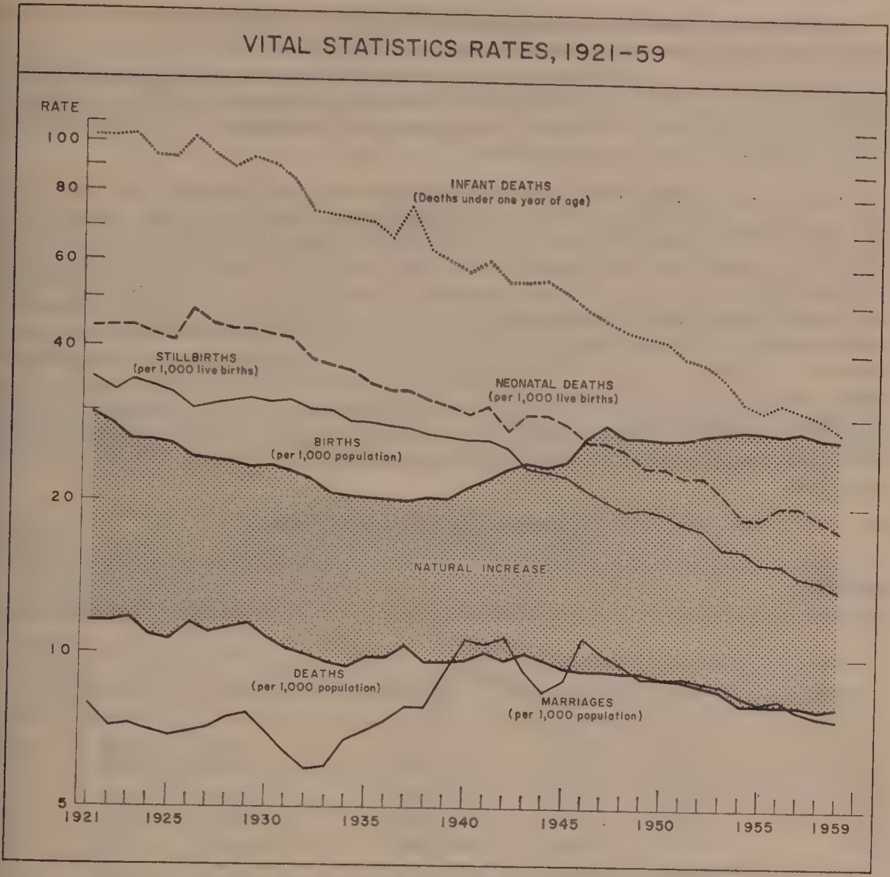
* For international comparisons, see Section 7, pp. 234-235.



VITAL STATISTICS RATES, 1921–59

It is often assumed that the Province of Quebec has the highest birth rate in Canada, but Table 1 shows that since the late 1930's or early 1940's Newfoundland and, in some years, New Brunswick have had higher rates than Quebec. In 1959, Newfoundland had a crude rate of 33.0 followed by Alberta with a rate of 30.6, Quebec with 28.5 and New Brunswick with 27.9; British Columbia and Manitoba had the lowest rates at 25.5 and 25.8, respectively. However, these crude rates are based on total population and therefore do not reflect the fertility of the women who are of reproductive age in the different provinces. A more accurate measure of fertility is the rate based on the number of married women in the population in the main reproductive ages, 15 to 44 years. The numbers of children born in 1957, 1958 and 1959 to every 1,000 married women in this age group were as follows:—

Province	*1957*	*1958*	*1959*
Prince Edward Island	223	214	221
Nova Scotia	194	189	190
New Brunswick	229	216	213
Quebec	218	212	209
Ontario	169	166	167
Manitoba	174	168	175
Saskatchewan	189	188	190
Alberta	194	194	194
British Columbia	163	163	163
CANADA[1]	188	184	185

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[1] Excludes Newfoundland and the Territories for which data are not available.

On this basis, Prince Edward Island, New Brunswick and Quebec, in that order, had the highest fertility rates and British Columbia and Ontario the lowest.

Also contrary to popular impression, since 1953 more babies were born each year in Ontario than in the Province of Quebec; in 1959, 157,124 babies were born to Ontario mothers as compared with 142,383 to Quebec mothers. Altogether, 479,275 children were born in Canada in 1959, a record number.

Sex of Live Births.—Wherever birth statistics have been collected they have shown an excess of male over female births. No conclusive explanation of this excess has yet been given. Nevertheless it is so much of an accepted statistical fact that a proper ratio of male to female births has become one of the criteria of complete registration. The number of males to every 1,000 females born in Canada has averaged around 1,057 since the middle 1930's. Provincial sex ratios vary much more widely because of the relatively small number of births involved—the smaller the total number of births, the greater the chance of wide sex-ratio variations from year to year. Another commonly acknowledged fact in many countries—although there is no generally accepted explanation for it—is that the male ratio appears to rise during or shortly after major wars. This seems to have happened in Canada between 1942 and 1945 when the ratio rose to an average of 1,064 during these four years as compared with averages of 1,054 between 1931-41 and 1,057 since 1946.

3.—Sex Ratios of Live Births, 1936-59

Note.—Figures for Newfoundland are included from 1949 and those for the Yukon and Northwest Territories from 1950.

Year	Males	Females	Males to 1,000 Females	Year	Males	Females	Males to 1,000 Females
	No.	No.	No.		No.	No.	No.
1936	113,289	107,082	1,058	1948	178,123	169,184	1,053
1937	113,143	107,092	1,057	1949	188,339	177,800	1,059
1938	117,862	111,584	1,056	1950	191,413	180,596	1,060
1939	117,594	111,874	1,051	1951	195,918	185,174	1,058
1940	125,279	119,037	1,052	1952	208,070	195,489	1,064
1941	131,175	124,142	1,057	1953	214,423	203,461	1,054
1942	140,584	131,729	1,067	1954	224,168	212,030	1,057
1943	145,725	137,855	1,057	1955	227,382	215,555	1,055
1944	146,652	137,568	1,066	1956	231,697	219,042	1,058
1945	148,912	139,818	1,065	1957	241,073	228,020	1,057
1946	169,945	160,787	1,057	1958	241,675	228,443	1,058
1947	183,973	175,121	1,051	1959	246,073	233,202	1,055

Hospitalized Births.—In 1959 over 93 p.c. of all Canadian births occurred in hospital. Table 4 shows the rise in hospitalized births in each province since 1931. Before the initiation of the federal-provincial hospital insurance program in 1958, in which all provinces with the exception of Quebec were participating by the end of 1959, wide variations existed among the provinces in percentages of hospitalized births. Such variations were caused by the existence of prepaid or provincially sponsored hospital, maternity or medical care plans in some provinces, the unavailability of hospital facilities in others—particularly in remote rural areas—and preference for home delivery in some local areas. Although some variation still exists, the operation of the hospital insurance program has probably been responsible for the noticeable increases in hospitalized births in provinces that previously had lower proportions—New Brunswick, for example, where hospital insurance was put into effect on July 1, 1959.

4.—Percentages of Live Births Hospitalized, by Province, 1931-59

Year	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada[1]
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1931	11.2	19.0	12.1	7.3	38.2	43.6	32.5	47.8	65.0	..	..	26.8
1941	32.7	50.4	30.8	17.6	67.5	73.6	63.2	77.1	87.3	..	..	48.9
1951	88.3	87.2	70.7	53.0	93.1	93.1	95.2	93.6	97.3	87.4	32.8	79.1
1955	93.6	93.3	83.4	66.6	96.7	95.6	97.7	95.0	98.1	89.3	45.5	86.5
1956	95.2	93.9	84.7	71.2	97.3	95.8	97.6	96.6	98.3	87.7	44.6	88.4
1957	96.7	95.1	86.8	75.6	97.9	96.4	98.3	97.5	98.5	91.3	38.6	90.2
1958	99.0	96.2	88.5	79.3	98.0	96.8	98.5	97.7	98.5	92.6	42.1	91.7
1959	99.2	98.0	93.5	82.3	98.6	97.4	98.5	98.0	98.6	88.6	45.7	93.1

[1] Excludes Newfoundland for which data are not available.

Births in Urban Centres.—Table 2, pp. 206-208, shows the number of births in 1959, as compared with the average for 1951-55, to mothers residing in urban centres of 10,000 population or over.

Illegitimacy.*—In 1959, over 4 p.c. of the live births in Canada were illegitimate. This percentage is low compared with that of many countries of the world.

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* The term "illegitimate", for statistical purposes, does not refer to births conceived out of wedlock but to those in which parents reported themselves as not having been married to each other at the time of the birth or the registration of the birth.

5.—Illegitimate Live Births and Percentages of Total Live Births, by Province, 1936-59

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada[1]
	ILLEGITIMATE LIVE BIRTHS												
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Av. 1936-40	246	83	766	415	2,539	2,939	506	663	643	475	..	..	9,030
" 1941-45	406	107	1,074	591	3,003	3,751	597	673	852	889	..	..	11,536
" 1946-50	441	152	1,244	754	3,382	4,256	766	914	1,202	1,516	..	..	14,375
" 1951-55	426	139	1,082	659	4,086	4,065	969	1,044	1,481	1,898	53	50	15,951
1956	529	154	1,194	688	4,454	4,415	1,002	1,058	1,674	2,207	60	75	17,510
1957	635	142	1,168	711	4,506	4,796	1,070	1,168	1,810	2,473	63	87	18,629
1958	593	131	1,165	698	4,625	4,907	1,176	1,138	1,896	2,515	75	108	19,027
1959	550	140	1,230	708	4,888	5,218	1,226	1,282	2,128	2,658	76	117	20,221
	PERCENTAGES OF TOTAL LIVE BIRTHS												
Av. 1936-40	3.2	4.0	6.4	3.7	3.2	4.6	3.7	3.6	3.9	3.9	..	..	3.9
" 1941-45	4.4	4.9	7.1	4.5	3.1	4.8	3.8	3.6	4.5	5.0	..	..	4.2
" 1946-50	3.6	5.3	6.9	4.5	2.9	4.0	4.0	4.2	4.9	5.9	..	..	4.1
" 1951-55	3.2	5.1	5.9	4.0	3.2	3.2	4.5	4.4	4.8	6.1	12.9	7.5	3.8
1956	3.6	5.8	6.2	4.2	3.3	3.1	4.6	4.4	4.8	6.1	12.5	9.6	3.9
1957	4.1	5.3	6.0	4.2	3.2	3.2	4.8	4.9	5.1	6.4	12.8	9.7	4.0
1958	4.0	5.1	6.2	4.3	3.3	3.2	5.4	4.8	5.1	6.4	15.9	11.4	4.0
1959	3.7	5.1	6.5	4.3	3.4	3.3	5.4	5.3	5.6	6.6	14.2	11.8	4.2

[1] Figures for Newfoundland are included from 1949, and those for the Yukon and Northwest Territories from 1951.

Stillbirths.*—The 6,560 stillbirths in 1959 represented a rate of 13.7 for every 1,000 foetuses born alive. The stillbirth rate has been decreasing steadily and has been cut by more than half over the past quarter-century. Although the variations between provincial rates have never been wide, rates in some provinces have been reduced more than in others. The stillbirth rate among unmarried mothers has been consistently higher than that among married mothers, but the difference has been narrowing in recent years; in 1959 the rate was actually lower than that for married mothers.

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* In recent years, provincial laws define a stillbirth, as here compiled, as the birth of a foetus after 28 weeks gestation which, when completely separated from the mother, "does not show any sign of life"; in earlier years they include only those of 28 weeks gestation which showed no sign of "breathing".

6.—Stillbirths and Rates per 1,000 Live Births, by Province, 1936-59

Year	Born to All Mothers													Born to Unmarried Mothers[1]	
	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada[2]	No.	P.C. of Total
	STILLBIRTHS														
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.		
Av. 1936-40	162	61	334	282	2,386	2,008	340	393	359	248	2	3	6,415	337	5.26
" 1941-45	191	50	388	295	2,786	1,988	345	348	327	309	1	6	6,845	355	5.20
" 1946-50	215	54	358	320	2,898	2,020	349	350	385	352	2	8	7,187	343	4.85
" 1951-55	222	52	337	291	2,705	2,017	336	313	425	374	6	11	7,088	316	4.60
1956........	260	51	337	331	2,584	1,969	316	291	409	413	4	11	6,976	311	4.63
1957........	259	46	325	252	2,551	1,999	302	280	385	422	5	11	6,837	299	4.55
1958........	267	42	319	254	2,424	2,017	309	270	395	414	5	10	6,726	286	4.43
1959........	307	54	261	252	2,324	2,016	299	247	376	404	6	14	6,560	237	3.79
	RATES PER 1,000 LIVE BIRTHS													Rate per 1,000 Illegitimate Live Births[1]	
Av. 1936-40	21.2	29.7	27.7	25.4	30.4	31.2	25.2	21.0	22.0	20.5	26.2	13.2	28.0	37.3	
" 1941-45	20.5	22.8	25.6	22.6	28.5	25.6	21.8	18.9	17.4	17.5	11.4	15.7	24.7	30.8	
" 1946-50	17.4	18.9	19.9	19.0	25.1	19.2	18.1	16.0	15.9	13.6	8.7	12.5	20.2	24.2	
" 1951-55	17.0	19.0	18.4	17.7	21.0	15.6	15.7	13.3	13.7	11.9	14.1	16.5	17.0	20.3	
1956........	17.9	19.2	17.6	20.0	19.0	13.7	14.4	12.1	11.7	11.4	8.3	14.0	15.5	18.3	
1957........	16.9	17.2	16.8	14.8	18.0	13.2	13.5	11.7	10.8	10.9	10.1	12.2	14.6	16.6	
1958........	18.0	16.3	16.9	15.5	17.1	13.2	14.2	11.3	10.7	10.5	10.6	10.6	14.3	15.5	
1959........	20.7	19.9	13.7	15.3	16.3	12.8	13.1	10.2	9.9	10.1	11.2	14.1	13.7	12.0	

[1] Exclusive of Newfoundland for all years and of the Yukon and Northwest Territories for 1936-50. [2] Figures for Newfoundland are included from 1949.

Multiple Births.—Approximately one confinement in 90 in Canada results in the birth of more than one child as compared with one in 85 several years ago—in other words, the chances of a confinement resulting in the birth of more than one child are fewer now than formerly. Other facts illustrated by Table 7 are that the proportion of stillbirths is higher among multiple than among single births and is about twice as high for twins and between three and five times as high for triplets.

7.—Single and Multiple Births, Live and Stillborn, 1956-59

Confinements and Births	Numbers				Percentages			
	1956	1957	1958	1959	1956	1957	1958	1959
Confinements	**452,607**	**470,651**	**471,436**	**480,524**	**100.0**	**100.0**	**100.0**	**100.0**
Single	447,547	465,423	466,065	475,266	98.9	98.9	98.9	98.9
Twin	5,012	5,178	5,334	5,205	1.1	1.1	1.1	1.1
Triplet	48	49	37	53	--	--	--	--
Quadruplet	—	1	—	—	—	--	—	—
Births	**457,715**	**475,930**	**476,844**	**485,835**	**100.0**	**100.0**	**100.0**	**100.0**
Single—								
Live	440,916	458,859	459,652	469,022	98.5	98.6	98.6	98.7
Stillborn	6,631	6,564	6,413	6,244	1.5	1.4	1.4	1.3
Twin—								
Live	9,683	10,093	10,360	10,110	96.6	97.5	97.1	97.1
Stillborn	341	263	308	300	3.4	2.5	2.9	2.9
Triplet—								
Live	140	137	106	143	97.2	93.2	95.5	89.9
Stillborn	4	10	5	16	2.8	6.8	4.5	10.1
Quadruplet—								
Live	—	4	—	—	—	100.0	—	—
Stillborn	—	—	—	—	—	—	—	—
Totals, Live Births	**450,739**	**469,093**	**470,118**	**479,275**	**98.5**	**98.6**	**98.6**	**98.6**
Totals, Stillborn	**6,976**	**6,837**	**6,726**	**6,560**	**1.5**	**1.4**	**1.4**	**1.4**

Fertility Rates.—Sex and age distribution of the population is an important factor in determining birth, death and marriage rates. More than 99 p.c. of the children born are to women between the ages of 15 and 50, so that, as noted earlier, variations in the proportion of women of these ages to the population as a whole will cause variations in the crude birth rates of different countries or regions even though the fertility of women at each age may be the same. Measures of fertility which are independent of the sex and age distribution of the population have therefore been devised. The best known of these are age-specific fertility rates—either per 1,000 *total* women* or per 1,000 *married* women in these age groups—and reproduction rates.

Ages of Parents.—Age of parents is an important variable in any analysis of birth statistics. The distribution of legitimate and illegitimate live births by age of the parents is given in Table **8**, and for stillbirths in Table **9**, as well as the average age of parents.

Close to 7 p.c. of the legitimate children born in 1959 were born to mothers under 20 years of age, in over one-third of the births the mother was under 25 years, and in almost two-thirds, under 30 years; in one out of six births the father was under 25 years of age, and in almost 48 p.c. of all births the father was under 30 years. On the other hand, over one-third (37.5 p.c.) of the illegitimate infants born were born to mothers under 20 years of age and an additional one-third to mothers under 25 years.

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* Available from DBS annual report, *Vital Statistics* (Catalogue No. 84-202).

8.—Live Births, by Age of Parents, 1959

(Exclusive of Newfoundland)

Age Group	Legitimate				Illegitimate	
	Fathers		Mothers		Mothers	
	No.	p.c.	No.	p.c.	No.	p.c.
Under 20 years	4,341	1.0	30,782	6.9	7,146	37.5
20 — 24 "	72,963	16.5	126,872	28.5	6,293	33.0
25 — 29 "	134,811	30.4	129,853	29.2	2,788	14.6
30 — 34 "	109,196	24.7	89,820	20.2	1,557	8.2
35 — 39 "	69,047	15.6	51,422	11.6	964	5.1
40 — 44 "	33,433	7.5	14,694	3.3	304	1.6
45 — 49 "	13,614	3.1	1,215	0.3	19	0.1
50 years or over	5,569	1.3	10	--	1	--
Totals, Stated Ages	**442,974**	**100.0**	**444,668**	**100.0**	**19,072**	**100.0**
Ages not stated	1,804	...	110	...	599	...
Totals, All Ages	**444,778**	**100.0**	**444,778**	**100.0**	**19,671**	**100.0**
Average ages	31.4		28.2		23.8	

Table **9** illustrates the fact that the risk of having a stillborn child increases with the age of the mother. Although stillbirth rates for mothers of all ages have been declining in recent years, they continue to be three times as high among mothers of 40-44 years and about four times as high among those over 45 years as for mothers under 30.

The average age of mothers who bore stillborn children in 1959 was 30.2 years; Table **8** shows that the average age of mothers who bore legitimate live-born children was 28.2 and those who bore illegitimate live-born offspring was 23.8.

9.—Stillbirths and Rates per 1,000 Live Births, by Age of Mother, 1959

(Exclusive of Newfoundland)

Age Group of Mother	Numbers		Stillbirth Rate per 1,000 Live Births
	Live Births	Stillbirths	
	No.	No.	No.
Under 20 years	37,928	369	9.7
20 — 24 "	133,165	1,275	9.6
25 — 29 "	132,641	1,534	11.6
30 — 34 "	91,377	1,363	14.9
35 — 39 "	52,386	1,140	21.8
40 — 44 "	14,998	496	33.1
45 — 49 "	1,234	46	37.3
50 years or over	11	2	181.8
Ages not stated	709	28	...
Totals, All Ages	**464,449**	**6,253**	**13.5**
Average age of mothers		30.2	

Order of Birth.—Table **10** shows the order of birth of all live-born infants in 1959 according to age of the mother. As would be expected, 28,152 or three out of every four of the 37,928 infants born to mothers under 20 years of age were first children, whereas almost six out of every ten of the children born to mothers of 20-24 years were second or later children. This is a reflection of the earlier marriages and heavy fertility of recent years.

10.—Order of Birth of Live-Born Children, by Age of Mother, 1959

(Exclusive of Newfoundland)

Order of Birth of Child	Age of Mother										Percentage of Total
	Under 15	15-19	20-24	25-29	30-34	35-39	40-44	45 or Over	Age Not Stated	All Ages	
	No.	No.	No.	No.	No	No.	No.	No.	No.	No.	
1st child......	213	27,939	55,521	25,745	9,260	3,268	697	50	551	123,244	26.5
2nd "	4	8,100	43,777	35,764	15,479	5,643	1,018	56	54	109,895	23.7
3rd "	—	1,440	21,197	30,665	19,250	8,169	1,572	93	33	82,419	17.7
4th "	—	202	8,582	19,094	16,346	8,615	1,874	108	16	54,837	11.8
5th "	—	23	2,876	10,649	11,281	6,957	1,758	118	10	33,672	7.2
6th "	—	4	901	5,657	7,010	5,284	1,508	117	5	20,486	4.4
7th "	—	2	235	2,820	4,822	3,963	1,213	106	3	13,164	2.8
8th "	—	—	54	1,350	3,268	2,962	1,089	73	1	8,797	1.9
9th "	—	—	15	562	2,068	2,268	901	85	2	5,901	1.3
10th "	—	—	3	217	1,274	1,667	793	79	—	4,033	0.9
11th "	—	—	1	74	671	1,240	656	68	1	2,711	0.6
12th "	—	—	—	29	345	946	513	73	—	1,906	0.4
13th "	—	—	—	9	172	603	438	61	1	1,284	0.3
14th "	—	—	—	5	65	405	360	50	1	886	0.2
15th "	—	—	—	—	47	201	251	34	1	534	0.1
16th "	—	—	—	—	13	114	151	26	—	304	0.1
17th "	—	—	—	—	4	37	102	20	—	163	--
18th "	—	—	—	—	—	26	47	9	—	82	--
19th "	—	—	—	—	—	9	32	6	—	47	--
20th or over.....	—	—	—	—	—	8	25	13	—	46	--
Not stated......	—	1	3	1	2	1	—	—	30	38	--
Totals......	**217**	**37,711**	**133,165**	**132,641**	**91,377**	**52,386**	**14,998**	**1,245**	**709**	**464,449**	**100.0**

Table 11 summarizes the pattern of family formation since 1936. The results of the immediate postwar 'baby boom' are obvious—57.9 p.c. of the infants born in 1947 were first or second children while fewer than half of the 1959 babies were first or second children.

11.—Percentage Distribution of Legitimate Live Births, by Order of Birth, 1936-59

(Exclusive of Newfoundland for all years and the Yukon and Northwest Territories for 1936-49)

Year	1st Child	2nd Child	3rd Child	4th and Later Children	Total
1936..	25.3	19.2	13.4	42.1	100.0
1937..	26.6	19.8	13.4	40.2	100.0
1938..	28.2	20.6	13.3	38.0	100.0
1939..	28.6	21.3	13.7	36.4	100.0
1940..	30.3	22.1	13.8	33.9	100.0
1941..	32.7	21.8	13.5	32.0	100.0
1942..	32.8	23.1	13.4	30.6	100.0
1943..	32.2	23.7	14.2	29.9	100.0
1944..	30.0	24.2	14.9	30.9	100.0
1945..	28.9	24.3	15.4	31.4	100.0
1946..	31.0	24.8	15.2	29.0	100.0
1947..	33.0	24.9	15.0	27.2	100.0
1948..	29.6	26.0	15.9	28.5	100.0
1949..	27.8	26.6	16.8	28.8	100.0
1950..	26.7	26.2	17.4	29.6	100.0
1951..	26.7	25.8	17.6	29.9	100.0
1952..	26.9	24.8	17.9	30.3	100.0
1953..	26.5	25.0	18.0	30.6	100.0
1954..	26.1	24.6	18.0	31.2	100.0
1955..	25.5	24.4	18.2	31.9	100.0
1956..	25.2	24.3	18.3	32.2	100.0
1957..	25.6	23.9	18.3	32.2	100.0
1958..	25.4	23.8	18.2	32.6	100.0
1959..	24.8	24.0	18.2	32.9	100.0

Section 3.—Deaths*

The Canadian death rate has moved downward from 10.2 per 1,000 of the population in 1931 to 8.2 for each of the years 1954 to 1957 and, following a record low of 7.9 in 1958, stood at 8.0 in 1959. Table 1, pp. 204-205, shows that this decline has been apparent in varying degrees in all provinces. The generally low rates in the Prairie Provinces are partly the result of their younger average population; the uniformly higher rate in British Columbia is mainly attributable to a high proportion of people in the older age groups.

Subsection 1.—General Mortality

Age and Sex Distribution of Deaths.—There has been a considerable reduction in infant mortality over the past 25 or 30 years, although more deaths still occur in the first year of life than in any other single year. Of the 104,517 deaths occurring in 1931, 25,737 or almost one-quarter were of children under five years of age and over three-quarters of those were of children under one year of age. Of the 139,913 deaths in 1959, 15,671 or 11 p.c. were of children under five years of age and, of those, 13,595 or nearly 87 p.c. were under one year. Most of the reduction took place among children over the age of one month but there was also a notable decrease in all childhood ages up to five years.

The trend in the over-all mortality pattern has been steeply downward since the early 1920's, the most important reduction being in the childhood and early adult ages. In 1931 over 19 p.c. of all male deaths were of persons five to 45 years of age; in 1959 only a little over 10 p.c. of the deaths occurred in this age group. Among females in the five to 45 age group the proportion dropped from just under 22 p.c. to less than 8 p.c. in the same comparison. While death rates for males up to age 45 have been roughly halved during the past 25 years, those for females under 45 years have been reduced as much as three to four times. In other words, the death rates for females at every age have declined more than those for males; the male rates have almost always been consistently higher than those for females and the differences are widening.

These reductions in the mortality rates in early and middle years of life have had the effect of increasing the number of people in the older age groups and raising the average age at death. In 1931 the average age at death of males was 43.1 years and of females 44.8 years; by 1959 this had advanced to 59.1 years and 62.3 years, respectively. These trends are indicated clearly in Table **12**.

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* For international comparisons, see Section 7, pp. 234-235.

12.—Distribution of Deaths, by Age and Sex, 1931, 1941, 1951 and 1959

Age Group	1931[1]		1941[1]		1951		1959	
	Male	Female	Male	Female	Male	Female	Male	Female
	Numbers							
Under 1 year	11,667	8,693	8,788	6,448	8,375	6,298	7,827	5,768
1 — 4 years	2,844	2,533	1,878	1,566	1,421	1,151	1,110	966
5 — 9 "	1,241	963	888	670	711	466	754	463
10 — 14 "	821	806	787	536	461	284	541	291
15 — 19 "	1,311	1,132	1,118	823	721	457	812	311
20 — 24 "	1,502	1,453	1,332	1,039	1,009	549	1,025	365
25 — 29 "	1,388	1,414	1,317	1,173	988	660	983	486
30 — 34 "	1,301	1,432	1,211	1,148	1,070	778	1,102	611
35 — 39 "	1,512	1,574	1,497	1,242	1,281	1,015	1,331	896
40 — 44 "	1,888	1,493	1,744	1,464	1,756	1,266	1,927	1,143
45 — 49 "	2,314	1,738	2,416	1,817	2,463	1,607	2,886	1,614
50 — 54 "	2,855	1,993	3,355	2,227	3,525	2,083	3,984	2,183
55 — 59 "	3,057	2,246	4,394	2,851	4,741	2,832	5,402	2,850
60 — 64 "	3,583	2,855	5,288	3,483	6,465	3,902	6,705	3,736
65 — 69 "	4,249	3,348	6,057	4,412	8,007	5,119	8,541	5,212
70 — 74 "	4,867	4,073	6,495	4,981	8,748	6,439	10,729	7,305
75 — 79 "	4,368	4,029	6,421	5,461	8,254	6,904	10,600	8,300
80 — 84 "	3,206	3,215	5,020	4,906	6,232	6,130	8,267	7,653
85 years or over	2,555	2,998	3,846	4,540	5,336	6,319	6,885	8,349
Totals, All Ages	**56,529**	**47,988**	**63,852**	**50,787**	**71,564**	**54,259**	**81,411**	**58,502**

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[1] Excludes the Yukon and Northwest Territories.

12.—Distribution of Deaths, by Age and Sex, 1931, 1941, 1951 and 1959—concluded

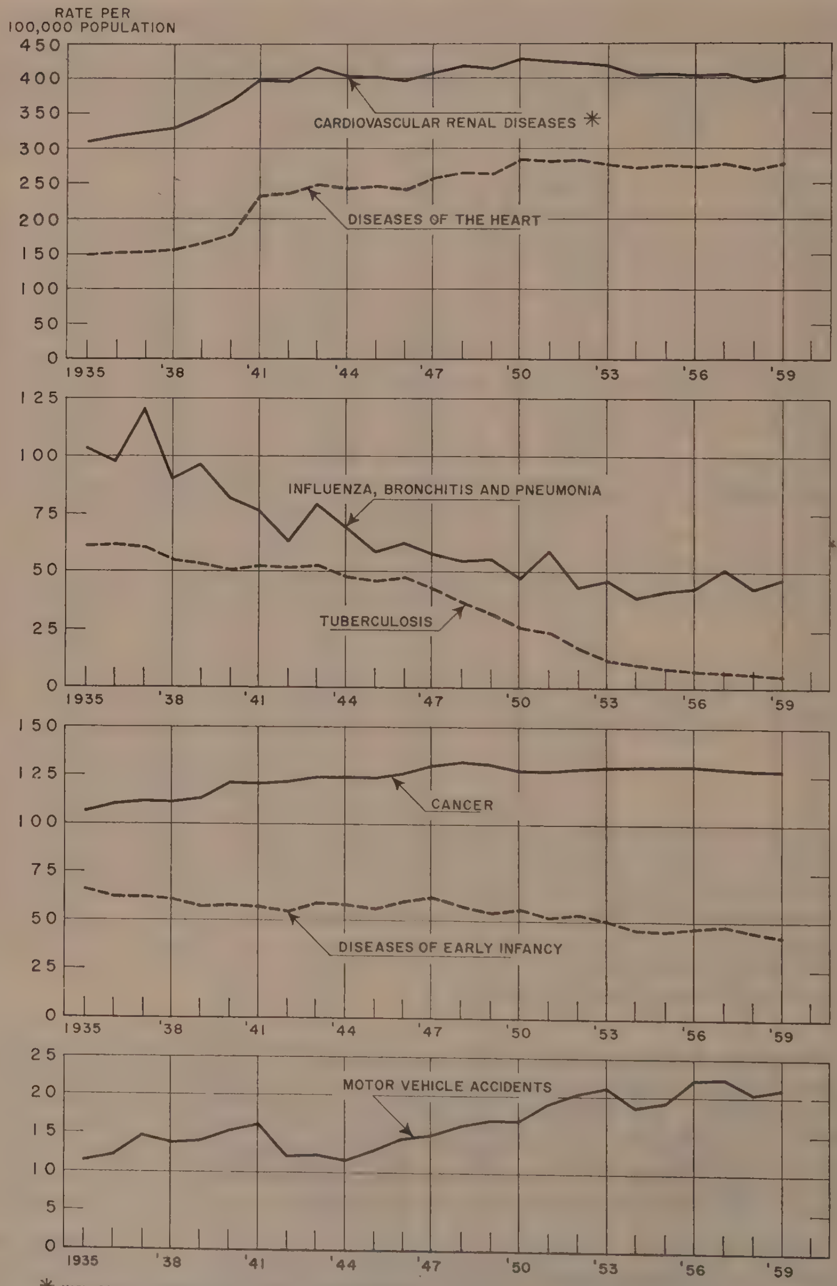
Age Group	1931[1]		1941[1]		1951		1959	
	Male	Female	Male	Female	Male	Female	Male	Female
	PERCENTAGES							
Under 1 year	20.6	18.1	13.8	12.7	11.7	11.6	9.6	9.9
1 — 4 years	5.0	5.3	2.9	3.1	2.0	2.1	1.4	1.7
5 — 9 "	2.2	2.0	1.4	1.3	1.0	0.9	0.9	0.8
10 — 14 "	1.5	1.7	1.2	1.1	0.6	0.5	0.7	0.5
15 — 19 "	2.3	2.4	1.8	1.6	1.0	0.8	1.0	0.5
20 — 24 "	2.7	3.0	2.1	2.0	1.4	1.0	1.3	0.6
25 — 29 "	2.5	2.9	2.1	2.3	1.4	1.2	1.2	0.8
30 — 34 "	2.3	3.0	1.9	2.3	1.5	1.4	1.4	1.0
35 — 39 "	2.7	3.3	2.3	2.4	1.8	1.9	1.6	1.5
40 — 44 "	3.3	3.1	2.7	2.9	2.5	2.3	2.4	2.0
45 — 49 "	4.1	3.6	3.8	3.6	3.4	3.0	3.5	2.8
50 — 54 "	5.0	4.2	5.3	4.4	4.9	3.8	4.9	3.7
55 — 59 "	5.4	4.7	6.9	5.6	6.6	5.2	6.6	4.9
60 — 64 "	6.3	5.9	8.3	6.9	9.0	7.2	8.2	6.4
65 — 69 "	7.5	7.0	9.5	8.7	11.2	9.4	10.5	8.9
70 — 74 "	8.6	8.5	10.2	9.8	12.2	11.9	13.2	12.5
75 — 79 "	7.7	8.4	10.1	10.7	11.5	12.7	13.0	14.2
80 — 84 "	5.7	6.7	7.9	9.7	8.7	11.3	10.2	13.1
85 years or over	4.5	6.2	6.0	8.9	7.5	11.6	8.5	14.3
Totals, All Ages	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
	RATES PER 1,000 POPULATION							
Under 1 year	113.5	87.3	80.6	61.1	46.3	36.4	34.0	26.2
1 — 4 years	6.5	5.9	4.4	3.8	2.0	1.7	1.2	1.1
5 — 9 "	2.2	1.7	1.7	1.3	1.0	0.7	0.8	0.5
10 — 14 "	1.5	1.5	1.4	1.0	0.8	0.5	0.6	0.4
15 — 19 "	2.5	2.2	2.0	1.5	1.4	0.9	1.2	0.5
20 — 24 "	3.2	3.2	2.6	2.0	1.9	1.0	1.7	0.6
25 — 29 "	3.4	3.8	2.7	2.5	1.8	1.1	1.6	0.8
30 — 34 "	3.5	4.2	2.8	2.8	2.1	1.5	1.7	1.0
35 — 39 "	4.2	4.8	3.8	3.4	2.5	2.0	2.2	1.5
40 — 44 "	5.4	5.0	5.0	4.5	3.9	3.0	3.5	2.1
45 — 49 "	7.2	6.6	7.3	6.0	6.4	4.5	5.8	3.4
50 — 54 "	10.7	9.0	10.6	8.1	10.4	6.5	9.5	5.6
55 — 59 "	15.4	13.4	16.0	12.3	16.2	10.2	15.6	8.6
60 — 64 "	22.9	20.7	24.2	18.5	24.5	16.1	24.2	13.4
65 — 69 "	35.2	30.3	37.3	30.4	35.1	24.9	36.6	22.2
70 — 74 "	55.0	49.1	58.5	47.0	54.5	41.6	55.7	37.3
75 — 79 "	87.4	82.9	95.7	79.7	87.6	73.3	83.6	62.8
80 — 84 "	134.1	127.1	147.6	131.2	135.5	120.7	133.1	110.4
85 years or over	228.1	212.6	241.9	229.3	235.1	212.0	234.2	218.0
Totals, All Ages	**10.5**	**9.6**	**10.8**	**9.1**	**10.1**	**7.8**	**9.2**	**6.8**
Average age at death	43.1	44.8	51.5	53.4	56.3	58.7	59.1	62.3

[1] Excludes the Yukon and Northwest Territories.

Deaths in Urban Centres.—Table 2 on pp. 206-208 shows the number of deaths in 1959 for urban centres of 10,000 population or over. Without a knowledge of the age composition of each centre it is difficult to compare rates for various centres. The migration of young people from rural areas to some urban centres and of older people to other centres creates a favourable situation for a low or high rate as the case may be. However, despite differences in the age factor, some urban areas have very low death rates compared with other centres of the same size and with other areas in the same province.

Causes of Death.—Table 13 shows the deaths and death rates in Canada grouped according to the International Abbreviated List of 50 Causes. About 80 p.c. of the deaths are caused by diseases of the heart and arteries, cancer, accidents, diseases of early infancy, the respiratory diseases—tuberculosis, pneumonia and influenza—and nephritis.

MAJOR CAUSES OF DEATH



* INCLUDES: DISEASES OF HEART (INCL. RHEUMATIC FEVER) AND ARTERIES, INTRACRANIAL LESIONS, CHRONIC NEPHRITIS.

The rise in the average age at death has already been noted (p. 216). Deaths from causes that mainly affect children and young adults have declined. Diphtheria, for example, has been almost wiped out—in fact there was not a single death from diphtheria during 1959—and tuberculosis has been greatly reduced. On the other hand, the aging of the population has increased the proportion of deaths from certain causes that affect older people. Thus, cancer and diseases of the cardiovascular-renal systems now account for a substantially larger proportion of all deaths than formerly.

These trends indicate the remarkable success that has attended the attack by health authorities on the infective and contagious diseases which in the past have constituted such a great hazard in the early and young adult years of life. They have served similarly to emphasize the emergence of the chronic and degenerative conditions of later life as the targets toward which the public health programs of the future will be directed. In effect, Canada has shared the experience of most western nations in exchanging a high mortality in younger life for high morbidity in older age groups.

The Chart opposite shows death rates for the major cause groups from 1935-59.

13.—Deaths and Rates per 100,000 Population, according to the International Abbreviated List of 50 Causes, 1958 and 1959

International List No.		Cause of Death	Numbers of Deaths		Rates per 100,000 Population	
Abbreviated List	Detailed List		1958	1959	1958	1959
B 1	001–008	Tuberculosis of respiratory system	883	834	5.2	4.8
B 2	010–019	Tuberculosis, other forms	144	125	0.8	0.7
B 3	020–029	Syphilis and its sequelæ	177	167	1.0	1.0
B 4	040	Typhoid fever	3	3	--	--
B 5	043	Cholera	—	—	—	—
B 6	045–048	Dysentery, all forms	25	20	0.1	0.1
B 7	050, 051	Scarlet fever and streptococcal sore throat	6	26	--	0.1
B 8	055	Diphtheria	7	—	--	—
B 9	056	Whooping cough	40	46	0.2	0.3
B10	057	Meningococcal infections	68	52	0.4	0.3
B11	058	Plague	—	—	—	—
B12	080	Acute poliomyelitis	26	182	0.2	1.0
B13	084	Smallpox	—	—	—	—
B14	085	Measles	93	84	0.5	0.5
B15	100–108	Typhus and other rickettsial diseases	—	—	—	—
B16	110–117	Malaria	—	—	—	—
B17	030–039, 041, 042, 044, 049, 052–054, 059–074, 081–083, 086–096, 120–138	All other diseases classified as infective and parasitic	373	344	2.2	2.0
B18	140–205	Cancer (all malignant neoplasms)	21,795	22,243	127.8	127.5
		Cancer	*20,580*	*20,987*	*120.7*	*120.3*
	(201)	Hodgkin's disease	*255*	*254*	*1.5*	*1.5*
	(204)	Leukæmia and aleukæmia	*960*	*1,002*	*5.6*	*5.7*
B19	210–239	Benign and unspecified neoplasms	294	333	1.7	1.9
B20	260	Diabetes mellitus	1,869	1,988	11.0	11.4
B21	290–293	Anæmias	398	338	2.3	1.9
B22	330–334	Vascular lesions affecting central nervous system	15,122	15,650	88.7	89.7
B23	340	Non-meningococcal meningitis	221	186	1.3	1.1
B24	400–402	Rheumatic fever	80	69	0.5	0.4
B25	410–416	Chronic rheumatic heart disease	1,402	1,437	8.2	8.2
B26	420–422	Arteriosclerotic and degenerative heart disease	38,853	40,970	227.9	234.9
B27	430–434	Other diseases of heart	2,044	2,150	12.0	12.3
B28	440–443	Hypertension with heart disease	3,710	3,687	21.8	21.1

13.—Deaths and Rates per 100,000 Population, according to the International Abbreviated List of 50 Causes, 1958 and 1959—concluded

International List No.		Cause of Death	Numbers of Deaths		Rates per 100,000 Population	
Abbreviated List	Detailed List		1958	1959	1958	1959
B29	444–447	Hypertension without mention of heart	1,162	1,089	6.8	6.2
B30	480–483	Influenza	760	1,271	4.5	7.3
B31	490–493	Pneumonia	5,190	5,619	30.4	32.2
B32	500–502	Bronchitis	854	883	5.0	5.1
B33	540, 541	Ulcer of stomach and duodenum	856	857	5.0	4.9
B34	550–553	Appendicitis	191	176	1.1	1.0
B35	560, 561, 570	Intestinal obstruction and hernia	860	881	5.0	5.1
B36	543, 571, 572	Gastritis, duodenitis, enteritis and colitis except diarrhœa of the newborn	1,070	995	6.3	5.7
B37	581	Cirrhosis of liver	965	1,015	5.7	5.8
B38	590–594	Nephritis and nephrosis	1,844	1,695	10.8	9.7
B39	610	Hyperplasia of prostate	554	556	3.2	3.2
B40	640–652, 660, 670–689	Complications of pregnancy, childbirth and the puerperium	263	263	1.5	1.5
B41	750–759	Congenital malformations	2,830	2,767	16.6	15.9
B42	760–762	Birth injuries, postnatal asphyxia and atelectasis	2,931	2,936	17.2	16.8
B43	763–768	Infections of the newborn	710	623	4.2	3.6
B44	769–776	Other diseases peculiar to early infancy and immaturity (unqualified)	3,923	3,894	23.0	22.3
B45	780–795	Senility without mention of psychosis, ill-defined and unknown causes	1,526	1,536	9.0	8.8
B46	Residual	All other diseases	10,448	11,019	61.3	63.2
BE47	E810–E835	Motor vehicle accidents	3,517	3,687	20.6	21.1
BE48	E800–E802 E840–E962	All other accidents	5,640	5,752	33.1	33.0
BE49	E963, E970–E979	Suicide and self-inflicted injury	1,271	1,287	7.5	7.4
BE50	E964, E965 E980–E999	Homicide and operations of war	203	178	1.2	1.0
		Totals, All Causes	**135,201**	**139,913**	**793.1**	**802.2**

Subsection 2.—Infant Mortality

Table 1, pp. 204-205, and Table 14 show the striking improvement that has taken place in the rate of infant mortality during the past quarter-century. Although 84,507 of the 2,748,360 children born in the years 1954-59 died before reaching their first birthday, 173,839 others lived who *would have died* at the rate prevailing in the period 1926-30.

Table 14 shows that mortality among male infants is 25 to 30 p.c. higher than that among female infants for Canada as a whole, with wider variations for the individual provinces. For the country as a whole in 1959, out of every 1,000 infant boys born alive, 32 died before reaching their first birthday, whereas out of every 1,000 infant girls 25 died within one year of their birth. As already pointed out, there are on the average 1,057 males born to every 1,000 females, but because male infant mortality is higher the excess of males is reduced greatly by the end of the first year. For example, in 1957-59 there were 728,821 male children born compared with 689,665 female children, an excess of 39,156 or 5.7 p.c.; during the same period, 24,292 male children died during their first year compared with 17,998 female children so that the excess of males at one year of age was reduced to 32,862 or under 5 p.c.

As indicated in Tables **1**, **2** and **14**, infant mortality rates have varied from province to province and from one locality to another. One of the principal causes of these variations appears to have been the different proportions of births taking place in hospital or under proper prenatal and postnatal care (see also p. 210). Many other factors have also been important, particularly the supervision of water supplies, improved sanitation, the pasteurization of milk, the use of antibiotics, more and better pædiatric services, improved obstetrical and hospital nursing services, improved home environment as a result of generally higher living standards and, in recent years, the lower age of mothers.

14.—Distribution of Infant Deaths by Province and Sex, 1941-59

Province and Year	Males	Females	Rate per 1,000 Male Live Births	Rate per 1,000 Female Live Births
	No.	No.		
Newfoundland......1951	361	276	60	48
1956	335	295	45	41
1957	363	241	47	32
1958	322	250	42	35
1959	345	231	45	32
P. E. Island........1941	102	61	95	63
1951	60	30	44	23
1956	60	45	46	33
1957	41	34	30	26
1958	61	23	46	18
1959	43	42	31	31
Nova Scotia........1941	545	363	77	53
1951	344	250	39	30
1956	325	229	33	25
1957	298	228	30	24
1958	321	236	33	26
1959	332	259	34	28
New Brunswick....1941	515	421	83	69
1951	472	363	58	46
1956	358	298	42	37
1957	333	256	37	32
1958	340	228	40	29
1959	315	221	37	28
Quebec.............1941	3,916	2,854	85	66
1951	3,335	2,486	54	42
1956	3,130	2,414	45	37
1957	3,094	2,318	42	34
1958	2,981	2,171	41	31
1959	2,740	1,995	38	29
Ontario.............1941	1,910	1,384	51	40
1951	2,010	1,535	34	28
1956	2,048	1,562	28	22
1957	2,177	1,599	28	22
1958	2,161	1,640	27	22
1959	2,110	1,663	26	22
Manitoba...........1941	447	341	59	47
1951	369	289	36	30
1956	365	311	33	29
Manitoba—concl. 1957	416	295	36	27
1958	371	285	33	27
1959	363	252	31	23
Saskatchewan.....1941	531	415	56	46
1951	353	323	32	30
1956	391	289	32	25
1957	358	251	29	22
1958	349	267	29	23
1959	376	250	30	21
Alberta...........1941	506	373	57	44
1951	531	358	39	27
1956	508	352	28	21
1957	531	432	29	25
1958	548	384	29	22
1959	554	368	28	20
British Columbia..1941	316	236	41	32
1951	487	352	34	26
1956	509	435	28	24
1957	619	477	32	25
1958	600	477	30	25
1959	568	426	28	22
Yukon Territory..1951	10	9	58	53
1956	11	12	42	55
1957	17	10	66	42
1958	12	8	48	36
1959	9	5	34	18
Northwest Territories......1951	43	27	136	81
1956	68	49	166	131
1957	66	63	151	136
1958	86	57	169	131
1959	72	56	140	118
Canada...........**1941**[1]	**8,788**	**6,448**	**67**	**52**
1951	**8,375**	**6,298**	**43**	**34**
1956	**8,108**	**6,291**	**35**	**29**
1957	**8,313**	**6,204**	**34**	**27**
1958	**8,152**	**6,026**	**34**	**26**
1959	**7,827**	**5,768**	**32**	**25**

[1] Excludes Newfoundland and the Yukon and Northwest Territories.

Infant Mortality in Urban Centres.—Because of the relatively small numbers of infant deaths in individual cities and towns, the rates for these centres usually vary widely from year to year. As is evident from Table 2, pp. 206-208, many cities and towns have maintained consistently low rates as compared with the national rate or the rate for the province in which they are situated.

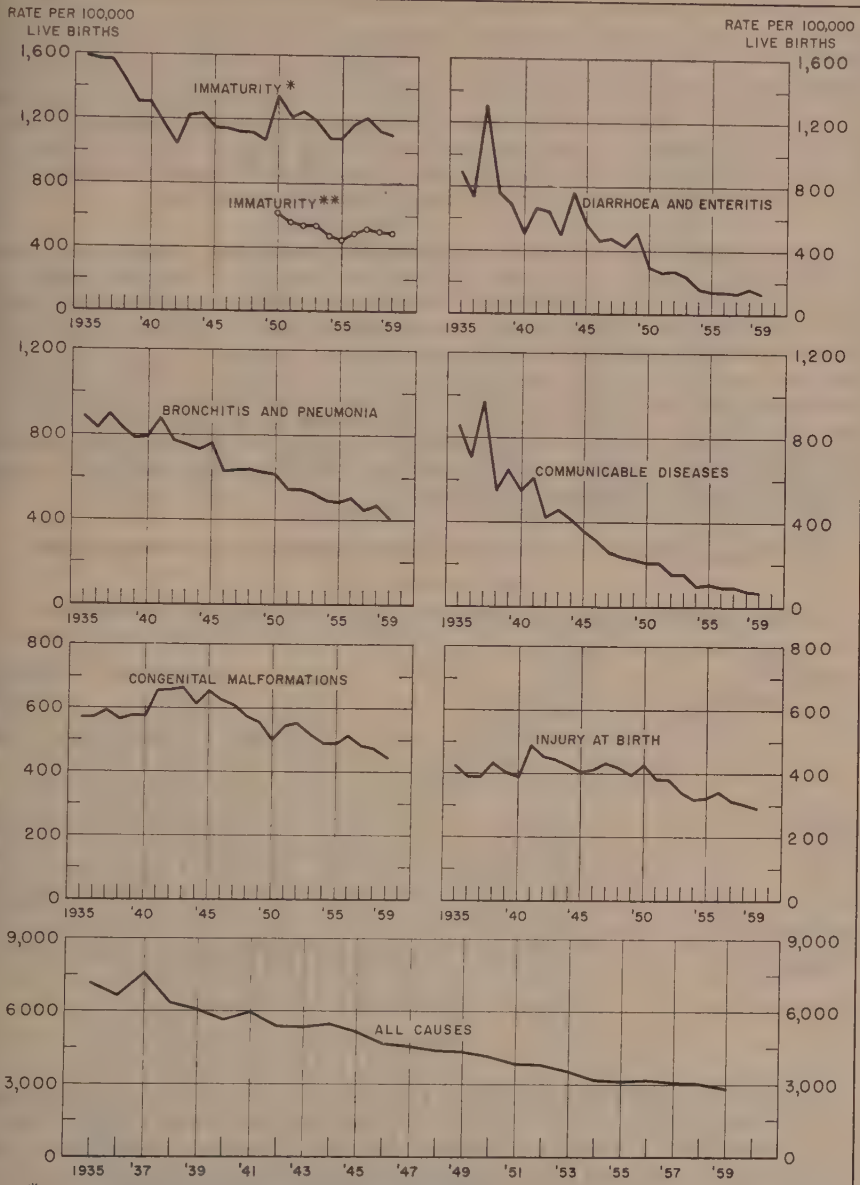
Age at Death.—In 1959 the ages of the 13,595 infants who died within a year of birth were by no means evenly spread over the twelve-month span. In fact, 12,393 or 91 p.c. of the infants were less than six months old and 8,841 or 65 p.c. were less than one month old. There was a sharp drop to 1,126 in the second month with gradual reductions thereafter to the eleventh month. Of the 8,841 deaths during the first month, 7,504 occurred in the first week of life, and no less than 4,422 took place in the first day.

Causes of Infant Deaths.—In 1959 more than two-thirds of the infant deaths were caused by immaturity, congenital malformations, pneumonia, postnatal asphyxia and atelectasis, and injury at birth. Immaturity was the underlying cause of 2,369 deaths, followed closely by congenital malformations with 2,149 fatalities. Pneumonia took the lives of 1,843 infants. Postnatal asphyxia accounted for 1,535 deaths and injury at birth for 1,400.

15.—Infant Mortality and Rates per 100,000 Live Births, by Cause, 1957-59

International List No.	Cause of Death	Numbers of Deaths			Rates per 100,000 Live Births		
		1957	1958	1959	1957	1958	1959
001–019	Tuberculosis	25	27	18	5	6	4
020–029	Syphilis	2	4	1	--	1	--
045–048	Dysentery	16	12	9	3	3	2
050	Scarlet fever	1	1	2	--	--	--
052	Erysipelas	—	—	2	—	—	--
055	Diphtheria	—	—	—	—	—	—
056	Whooping cough	44	32	39	9	7	8
057	Meningococcal infections	38	28	25	8	6	5
085	Measles	35	35	28	7	7	6
140–239	Neoplasms	43	43	53	9	9	11
273	Diseases of thymus gland	16	32	29	3	7	6
325	Mental deficiency	40	48	65	9	10	14
340	Meningitis (non-meningococcal)	99	112	79	21	24	16
391, 392	Otitis media	132	92	89	28	20	19
470–475	Acute upper respiratory infections	79	56	59	17	12	12
480–483	Influenza	285	204	175	61	43	37
490–493	Pneumonia (4 weeks and over)	1,460	1,557	1,389	311	331	290
500–502	Bronchitis	97	133	105	21	28	22
543	Gastritis and duodenitis	3	4	2	1	1	--
560–570	Hernia and intestinal obstruction	97	117	102	21	25	21
571	Gastro-enteritis and colitis	445	590	490	95	126	102
572	Chronic enteritis, and ulcerative colitis	2	5	1	--	1	--
750–759	Congenital malformations	2,265	2,235	2,149	483	475	448
760, 761	Injury at birth	1,478	1,422	1,400	315	302	292
762	Postnatal asphyxia and atelectasis	1,751	1,508	1,535	373	321	320
763	Pneumonia of newborn (under 4 weeks)	551	519	454	117	110	95
764	Diarrhœa of newborn (under 4 weeks)	187	149	126	40	32	26
765–768	Other infections of the newborn	60	42	43	13	9	9
769	Antenatal toxæmia	150	141	121	32	30	25
770	Erythroblastosis	356	373	377	76	79	79
771	Hæmorrhagic disease of newborn	142	107	107	30	23	22
772	Nutritional maladjustment	102	76	71	22	16	15
773	Ill-defined diseases peculiar to early infancy	764	872	849	163	185	177
774–776	Immaturity	2,435	2,354	2,369	519	501	494
795	Ill-defined and unknown causes	226	150	145	48	32	30
E810–E825	Motor vehicle accidents	15	25	24	3	5	5
E900–E904	Accidental falls	8	14	10	2	3	2
E916	Accidents caused by fire	33	29	29	7	6	6
E921, E922	Inhalation and ingestion of food or other object	304	299	303	65	64	63
E924, E925	Accidental mechanical suffocation	143	152	159	30	32	33
	Other accidental and violent deaths	53	50	42	11	11	9
	Other specified causes	535	529	520	114	113	108
	Totals, All Causes	**14,517**	**14,178**	**13,595**	**3,095**	**3,016**	**2,837**

LEADING CAUSES OF INFANT DEATHS



* DUE TO CHANGES IN CLASSIFICATION, NOT STRICTLY COMPARABLE OVER THE PERIOD; INCLUDES ALL DEATHS INVOLVING IMMATURITY EITHER AS THE UNDERLYING CAUSE OR AS A COMPLICATION.

** INCLUDES CATEGORIES 774–776, INTERNATIONAL STATISTICAL CLASSIFICATION (6th. Rev.) WHERE IMMATURITY REPORTED ALONE AS UNDERLYING CAUSE.

Subsection 3.—Maternal Mortality

As indicated in Table 1, pp. 204-205, the number of mothers who die in pregnancy and childbirth has been greatly reduced during the past two decades. Although the number of births has been much greater in recent years, the number of maternal deaths declined steadily from 1930 (when there were 1,215 deaths and a rate of almost 50 deaths for every 10,000 births delivered alive) to a record low of 255 in 1957 followed by a slight rise to 263 in both 1958 and 1959. Since 1945 the rate of maternal mortality has been less than 20 per 10,000 live births delivered and has been under 10 since 1951. In 1959 there was a slight decrease in the rate to 5.4 per 10,000 live births from 5.5 in 1958. Mortality among unmarried mothers is higher than among married mothers.

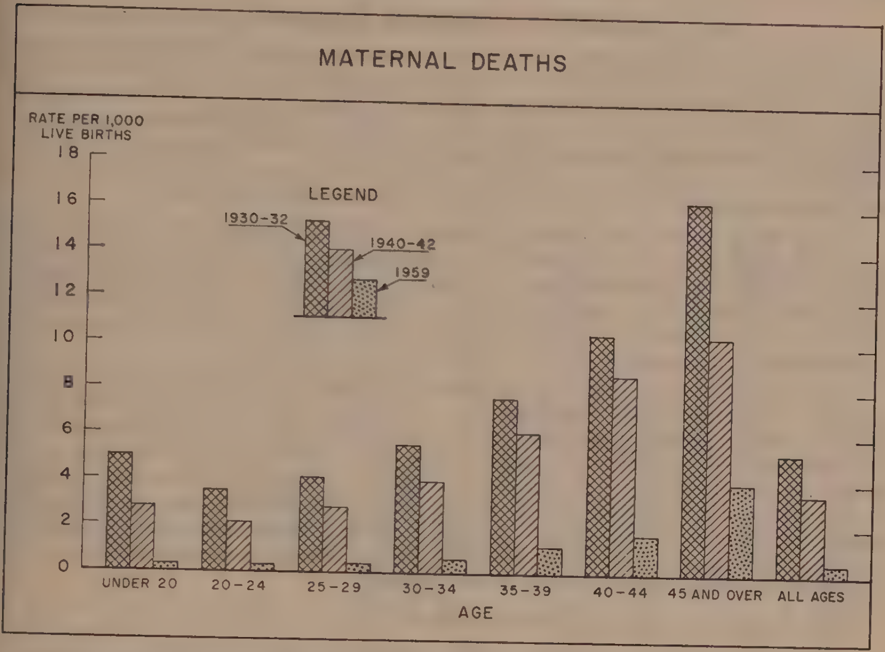
Age at Death.—Table 16 shows the distribution of maternal deaths by age group and average age at death. The latter is about four years higher than the average age of all mothers at the time of childbirth. The rates per 10,000 live births by age group show that age is a most important factor in maternal mortality. Until very recent years the risk of mortality at childbirth was directly related to the age of the mother; in other words, for all mothers of over 20 years the rate rose with increasing age. Though death rates for all age groups of mothers have been declining, recently there have been rather significant changes in the rates. Formerly, the rate for mothers in the age group 30-34 was twice or three times as high as the rate for the 20-24 group, but in recent years mortality rates for the four age groups of mothers under 35 years of age have not been far apart, although after age 35 a sharp rise has occurred.

16.—Maternal Mortality and Rates per 10,000 Live Births, by Age Group, 1957-59

(Exclusive of Newfoundland)

Age Group	Maternal Deaths						Rates per 10,000 Live Births		
	1957		1958		1959		1957	1958	1959
	No.	p.c.	No.	p.c.	No.	p.c.			
Under 20 years	10	4.3	12	4.8	12	4.8	2.9	3.3	3.2
20 — 24 "	44	18.7	37	14.9	41	16.3	3.5	2.9	3.1
25 — 29 "	51	21.7	48	19.3	51	20.3	3.9	3.6	3.8
30 — 34 "	34	14.5	41	16.5	54	21.5	3.7	4.5	5.9
35 — 39 "	60	25.5	74	29.7	63	25.1	11.7	14.4	12.0
40 — 44 "	32	13.6	36	14.5	25	10.0	20.7	24.2	16.6
45 — 49 "	4	1.7	1	0.4	4	1.6	33.9	8.6	32.4
50 years or over	—	—	—	—	1	0.4	—	—	--
Totals, All Ages	**235**	**100.0**	**249**	**100.0**	**251**	**100.0**	**5.2**	**5.5**	**5.4**
Average age at death	31.9		32.4		31.8		...	...	...

Causes of Maternal Deaths.—Table 17 shows the main causes of maternal deaths during the years 1957-59. Until a decade or so ago, sepsis and toxæmia were by far the most important causes of death of mothers at childbirth. The danger of death from sepsis and other infection has been sharply reduced over the past 15 to 20 years through the use of antibiotics and probably also through increased use of medical services. On the other hand, the number of deaths caused by toxæmia arising during pregnancy and other complications of both pregnancy and delivery represent continuing problems. Hæmorrhage during pregnancy or delivery, which has been another important cause of mortality among mothers, has shown some reduction in recent years.



17.—Maternal Mortality and Rates per 100,000 Live Births, by Cause, 1957-59

International List No.	Cause of Death	Numbers of Deaths			Rates per 100,000 Live Births		
		1957	1958	1959	1957	1958	1959
	Complications of Pregnancy	**71**	**93**	**82**	**15**	**20**	**17**
640, 641	Infections of the genito-urinary tract during pregnancy	1	1	2	--	--	--
642	Toxæmias of pregnancy	42	59	42	9	13	9
643	Placenta prævia noted before delivery	1	3	1	--	1	--
644	Other hæmorrhage of pregnancy	1	2	4	--	--	1
645	Ectopic pregnancy	13	6	9	3	1	2
646-649	Other complications of pregnancy	13	22	24	3	5	5
	Abortion	**39**	**34**	**41**	**8**	**7**	**9**
650, 652	Abortion without mention of sepsis	19	11	17	4	2	4
651	Abortion with sepsis	20	23	24	4	5	5
	Complications of Delivery	**109**	**96**	**95**	**23**	**20**	**20**
660	Delivery (without complication)	—	—	1	—	—	--
670	Delivery complicated by placenta prævia or antepartum hæmorrhage	30	29	25	6	6	5
671	Delivery complicated by retained placenta	5	6	6	1	1	1
672	Delivery complicated by other postpartum hæmorrhage	16	24	24	3	5	5
673, 674	Delivery complicated by abnormality of bony pelvis or malposition of foetus	7	3	7	1	1	1
675	Delivery complicated by prolonged labour of other origin	9	6	6	2	1	1
676, 677	Delivery with laceration or other trauma	13	15	14	3	3	3
678	Delivery with other complications of childbirth	29	13	12	6	3	3
	Complications of the Puerperium	**36**	**40**	**45**	**8**	**9**	**9**
680	Puerperal urinary infection without other sepsis	—	1	—	—	--	—
681	Sepsis of childbirth and the puerperium	8	8	11	2	2	2
682-684	Puerperal phlebitis, thrombosis, pyrexia, pulmonary embolism	12	15	19	3	3	4
685, 686	Puerperal eclampsia and toxæmia	10	7	5	2	1	1
687-689	Other	6	9	10	1	2	2
	Totals, All Puerperal Causes	**255**	**263**	**263**	**54**	**56**	**55**

Section 4.—Natural Increase*

The rate of natural increase in Canada (excess of births over deaths) prior to 1930 was 13 or more per 1,000 population. Partly as a result of the depression, the birth rate declined more than the death rate and the rate of natural increase fell to 9.7 in 1937. Higher birth rates during and after World War II and a gradually declining death rate caused the natural increase rate to rise steadily from 10.9 in 1939 to a record 20.3 in 1954. Since that time there has been a slight drop but the rate stood at 19.5 in 1959—probably the highest among the more industrially developed countries of the world.

Table 18 shows the rates of natural increase in the provinces and for each sex separately. The high rates in the Prairie Provinces are partly accounted for by their relatively younger populations and consequent low death rates. High birth rates and declining death rates, particularly in Quebec, have given Newfoundland, Alberta, Quebec, Saskatchewan and New Brunswick the highest rates of natural increase in Canada in recent years (excluding the Yukon and Northwest Territories).

The rates of natural increase are higher for females than for males in all provinces because of the higher death rates for males. In the western provinces particularly, the ratio of males to females in the total population is higher than in other parts of Canada and this tends to lower the rate of natural increase. In Canada, a country with a fairly young population and where immigration has been on a large scale, an excess of males is to be expected but the higher rate of natural increase for females may gradually reduce this excess. The trend is toward an eventual excess of females in the total population—as there now is in most European countries—unless immigration again raises the male ratio or death rates among males are greatly reduced.

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* For international comparisons, see Section 7, pp. 234-235.

18.—Natural Increase and Rates per 1,000 Population, by Sex and Province, 1941-59

Province and Year	Excess of Births Over Deaths	Rate per 1,000 Population	Males		Females	
			Number	Rate per 1,000 Males	Number	Rate per 1,000 Females
Newfoundland................Av. 1951-55	10,175	26.5	5,066	25.7	5,108	27.4
1956	11,483	27.6	5,722	26.8	5,761	28.6
1957	12,117	28.5	5,906	26.9	6,211	30.1
1958	11,693	26.7	5,952	26.3	5,741	27.2
1959	11,647	25.9	5,777	24.8	5,870	27.2
Prince Edward Island........Av. 1941-45	1,216	13.2	608	12.7	608	13.8
Av. 1946-50	1,947	20.7	972	20.0	975	21.3
Av. 1951-55	1,797	18.0	890	17.5	907	18.5
1956	1,724	17.4	765	15.1	959	19.7
1957	1,760	17.7	836	16.7	924	18.9
1958	1,632	16.3	776	15.3	856	17.3
1959	1,713	16.8	842	16.3	871	17.3
Nova Scotia..................Av. 1941-45	8,820	14.7	4,343	14.1	4,477	15.2
Av. 1946-50	11,952	19.2	5,902	18.6	6,050	19.7
Av. 1951-55	12,444	18.7	6,126	18.2	6,318	19.3
1956	13,368	19.2	6,719	19.0	6,649	19.5
1957	13,339	19.0	6,423	18.0	6,916	20.1
1958	12,778	18.0	6,258	17.3	6,520	18.7
1959	12,667	17.7	6,067	16.6	6,600	18.8
New Brunswick..............Av. 1941-45	7,987	17.3	3,973	16.8	4,014	17.8
Av. 1946-50	11,992	24.2	6,011	23.8	5,982	24.5
Av. 1951-55	11,920	22.4	5,859	21.9	6,062	22.9
1956	11,915	21.5	6,014	21.5	5,901	21.5
1957	12,425	22.0	6,250	21.9	6,175	22.1
1958	11,886	20.6	5,899	20.3	5,987	20.9
1959	11,739	19.9	5,799	19.5	5,940	20.3

18.—Natural Increase and Rates per 1,000 Population, by Sex and Province, 1941-59—concluded

Province or Territory and Year		Excess of Births Over Deaths	Rate per 1,000 Population	Males		Females	
				Number	Rate per 1,000 Males	Number	Rate per 1,000 Females
Quebec	Av. 1941-45	63,633	18.5	32,012	18.5	31,621	18.4
	Av. 1946-50	81,773	21.5	41,001	21.6	40,772	21.5
	Av. 1951-55	94,254	22.0	46,897	21.9	47,357	22.1
	1956	100,842	21.8	50,220	21.7	50,622	21.9
	1957	105,473	22.2	52,320	21.9	53,153	22.4
	1958	105,622	21.7	52,027	21.2	53,595	22.0
	1959	105,993	21.2	52,416	20.9	53,577	21.5
Ontario	Av. 1941-45	38,000	9.7	18,456	9.3	19,544	10.1
	Av. 1946-50	62,947	14.7	30,699	14.2	32,248	15.2
	Av. 1951-55	84,146	17.1	41,079	16.5	43,067	17.6
	1956	96,285	17.9	46,813	17.2	49,472	18.4
	1957	101,756	18.1	49,498	17.5	52,258	18.7
	1958	103,960	17.9	50,740	17.4	53,220	18.5
	1959	106,524	17.9	52,053	17.4	54,471	18.4
Manitoba	Av. 1941-45	9,198	12.7	4,349	11.6	4,849	13.9
	Av. 1946-50	12,627	16.9	6,012	15.7	6,615	18.1
	Av. 1951-55	14,546	18.0	6,866	16.7	7,680	19.3
	1956	14,887	17.5	6,929	16.0	7,958	19.1
	1957	14,994	17.4	7,014	16.0	7,980	18.9
	1958	14,552	16.7	6,851	15.5	7,701	18.0
	1959	15,380	17.4	7,298	16.2	8,082	18.6
Saskatchewan	Av. 1941-45	12,007	14.1	5,696	12.5	6,311	16.0
	Av. 1946-50	15,434	18.5	7,302	16.6	8,132	20.7
	Av. 1951-55	17,007	19.9	8,038	18.0	8,969	21.8
	1956	17,393	19.7	8,251	18.0	9,142	21.7
	1957	17,178	19.5	8,175	17.9	9,003	21.3
	1958	17,360	19.6	8,100	17.6	9,260	21.7
	1959	17,316	19.2	8,036	17.2	9,280	21.3
Alberta	Av. 1941-45	12,490	15.7	5,823	13.7	6,668	18.0
	Av. 1946-50	17,476	20.4	8,295	18.4	9,181	22.6
	Av. 1951-55	23,560	23.2	11,271	21.2	12,289	25.4
	1956	27,165	24.2	13,069	22.3	14,096	26.2
	1957	27,463	23.7	13,153	21.7	14,310	25.8
	1958	28,605	23.8	13,746	22.0	14,859	25.8
	1959	29,599	23.8	14,180	22.0	15,419	25.8
British Columbia	Av. 1941-45	8,337	9.3	3,241	6.9	5,096	12.0
	Av. 1946-50	14,867	13.8	6,368	11.4	8,499	16.4
	Av. 1951-55	19,114	15.3	8,474	13.2	10,640	17.5
	1956	22,826	16.3	10,183	14.1	12,643	18.6
	1957	25,033	16.9	11,145	14.5	13,888	19.3
	1958	25,836	16.7	11,689	14.7	14,147	18.9
	1959	25,635	16.4	11,661	14.4	13,974	18.3
Yukon	Av. 1951-55	323	33.6	144	25.2	179	45.6
	1956	396	33.0	200	29.0	196	37.0
	1957	401	33.4	195	28.7	206	39.6
	1958	381	29.3	184	25.2	197	34.6
	1959	448	34.5	191	26.2	257	45.1
Northwest Territories	Av. 1951-55	382	23.0	196	20.8	186	25.9
	1956	494	26.0	236	21.1	258	31.9
	1957	575	30.3	258	23.5	317	39.6
	1958	612	30.6	308	26.8	304	35.8
	1959	701	33.3	342	28.5	359	39.9
Canada[1]	**Av. 1941-45**	**161,688**	**13.7**	**78,501**	**13.0**	**83,187**	**14.5**
	Av. 1946-50	**234,999**	**18.1**	**114,560**	**17.4**	**120,439**	**18.9**
	Av. 1951-55	**289,668**	**19.5**	**140,906**	**18.7**	**148,762**	**20.3**
	1956	**318,778**	**19.8**	**155,121**	**19.0**	**163,657**	**20.6**
	1957	**332,514**	**20.1**	**161,173**	**19.2**	**171,341**	**21.0**
	1958	**334,917**	**19.7**	**162,530**	**18.8**	**172,387**	**20.5**
	1959	**339,362**	**19.5**	**164,662**	**18.6**	**174,700**	**20.3**

[1] Figures for Newfoundland are included from 1949 and those for the Yukon and Northwest Territories from 1950.

Natural Increase in Urban Centres.—The classification of births and deaths b place of residence makes it possible to compile the natural increase in the population o urban centres; the figures are presented in Table **2**, pp. 206–208.

Section 5.—Marriages and Divorces

Subsection 1.—Marriages*

In 1959 Canada's marriage rate was 7.6 per 1,000 population, the lowest in over twent years. Provincial rates varied from 6.3 per 1,000 population for Prince Edward Islan to 8.4 for Alberta. Table **19** shows the number of marriages and the marriage rates pe 1,000 population for Canada and the provinces, and percentages of brides and bridegrooms according to place of birth. For the country as a whole, over 80 p.c. of the grooms c 1959 were born in Canada and nearly 66 p.c. in the province in which they were married over 84 p.c. of the brides were born in Canada and over 72 p.c. in the province in whic they were married. However, as would be expected because of heavy immigration c young persons in the postwar years, an increasing number of marriages are of persons bor outside the country. For example, 19.6 p.c. of the grooms married in 1959 were bor outside Canada compared with 11.7 p.c. in 1941; for brides the percentages were 15.9 p. and 8.4 p.c., respectively. However, there are wide variations in this pattern as betwee provinces; in the older Atlantic Provinces and Quebec there is a greater tendency than i the other provinces to marry native Canadians. In these areas both partners in a marriag are often born in the same province.

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* For international comparisons, see Section 7, pp. 234-235.

19.—Marriages and Rates per 1,000 Population, by Province, with Percentage Distributio of Bridegrooms and Brides by Nativity, 1941-59

Province and Year	Total Marriages	Rate per 1,000 Population	Born in Province Where Married		Born in Other Provinces		Born Outside Canada	
			Grooms	Brides	Grooms	Brides	Grooms	Brid
	No.		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Newfoundland 1951	2,517	7.0	85.2	96.7	2.4	1.9	12.4	1.
1956	3,073	7.4	84.3	96.4	3.3	1.6	12.4	2.
1957	3,041	7.1	84.4	96.7	3.6	1.2	12.0	2.
1958	3,047	7.0	87.8	97.7	2.1	1.0	10.2	1.
1959	2,893	6.4	86.4	96.5	3.3	1.4	10.3	2.
Prince Edward Island 1941	673	7.1	78.8	86.6	15.0	9.4	6.2	4.
1951	583	5.9	82.3	91.1	12.9	6.0	4.8	2.
1956	649	6.6	80.7	92.8	14.8	4.8	4.5	2.
1957	627	6.3	81.7	93.6	13.7	4.5	4.6	1.
1958	619	6.2	77.7	93.7	16.8	4.8	5.5	1.
1959	639	6.3	84.4	92.0	11.9	5.9	3.8	2.
Nova Scotia 1941	6,596	11.4	73.2	83.8	16.8	9.5	10.0	6.
1951	5,094	7.9	78.2	86.7	15.9	9.0	6.0	4.
1956	5,543	8.0	74.8	88.1	18.9	9.1	6.4	2.
1957	5,206	7.4	75.7	87.3	18.8	8.9	5.5	3.
1958	5,135	7.2	73.9	87.2	20.1	9.2	5.9	3.
1959	5,310	7.4	74.5	87.2	19.2	9.4	6.3	3.
New Brunswick 1941	4,941	10.8	78.5	84.4	13.3	9.7	8.2	5.
1951	4,386	8.5	80.0	86.9	10.1	6.7	9.8	6.
1956	4,591	8.3	75.9	86.8	12.2	6.3	11.9	6.
1957	4,284	7.6	77.0	86.9	11.7	6.3	11.2	6.
1958	4,170	7.2	74.9	85.8	12.9	7.2	12.2	7.
1959	4,310	7.3	73.8	84.7	14.1	7.9	12.2	7.
Quebec 1941	32,782	9.8	86.1	89.3	6.7	5.9	7.2	4
1951	35,704	8.8	86.7	89.5	6.1	5.5	7.2	5
1956	37,290	8.1	85.6	88.8	5.7	5.0	8.7	6
1957	37,135	7.8	84.0	87.2	5.8	4.9	10.2	7.
1958	36,229	7.4	83.0	86.1	5.5	4.7	11.5	9
1959	37,124	7.4	82.8	86.6	5.7	4.4	11.5	9

19.—Marriages and Rates per 1,000 Population, by Province, with Percentage Distribution of Bridegrooms and Brides by Nativity, 1941-59—concluded

Province or Territory and Year	Total Marriages	Rate per 1,000 Population	Born in Province Where Married		Born in Other Provinces		Born Outside Canada	
			Grooms	Brides	Grooms	Brides	Grooms	Brides
	No.		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Ontario 1941	43,270	11.4	89.2	89.0	4.2	4.5	6.7	6.5
1951	45,198	9.8	65.9	72.4	14.6	12.2	19.5	15.4
1956	46,282	8.6	61.9	68.1	14.0	12.2	24.2	19.8
1957	46,780	8.3	59.7	65.7	13.4	11.7	26.8	22.6
1958	46,894	8.1	58.2	64.0	13.4	11.3	28.4	24.8
1959	46,598	7.8	58.9	64.8	13.2	11.1	27.8	24.1
Manitoba 1941	8,305	11.4	63.0	73.7	17.4	15.0	19.6	11.4
1951	7,366	9.5	67.9	75.1	15.4	13.3	16.8	11.6
1956	6,709	7.9	64.7	74.9	19.7	14.4	15.6	10.7
1957	6,594	7.7	65.3	75.4	18.8	12.8	15.9	11.8
1958	6,430	7.4	65.1	74.9	18.2	12.9	16.7	12.2
1959	6,661	7.5	65.1	75.1	17.8	12.7	17.0	12.3
Saskatchewan 1941	7,036	7.9	64.7	79.1	16.1	10.0	19.1	10.9
1951	6,805	8.2	78.3	86.4	10.7	6.4	11.1	7.2
1956	6,403	7.3	76.5	87.9	13.7	5.4	9.8	6.7
1957	6,510	7.4	76.4	86.8	13.2	6.5	10.4	6.7
1958	6,464	7.3	78.5	86.6	11.7	6.6	9.8	6.9
1959	6,388	7.1	78.2	86.2	12.2	7.0	9.6	6.8
Alberta 1941	8,470	10.6	50.0	63.4	23.9	19.9	26.2	16.8
1951	9,305	9.9	56.0	67.4	25.7	19.6	18.3	13.0
1956	9,965	8.9	53.7	63.9	25.9	20.6	20.4	15.5
1957	10,117	8.7	52.9	62.8	26.1	20.6	21.0	16.5
1958	10,186	8.5	52.5	61.2	25.2	20.9	22.3	17.9
1959	10,402	8.4	53.3	62.4	25.2	20.7	21.5	16.9
British Columbia 1941	9,769	11.9	35.9	43.5	35.6	37.1	28.5	19.4
1951	11,272	9.7	35.5	41.6	43.1	43.0	21.3	15.5
1956	11,950	8.5	33.7	41.2	40.9	38.9	25.4	19.9
1957	12,620	8.5	32.3	39.2	39.3	37.5	28.4	23.3
1958	12,094	7.8	32.6	39.9	36.7	34.6	30.7	25.4
1959	11,910	7.6	33.3	42.3	36.9	33.5	29.8	24.2
Yukon 1956	112	9.3	17.0	25.0	58.0	58.0	25.0	17.0
1957	110	9.2	14.5	22.7	66.4	67.3	19.1	10.0
1958	109	8.4	11.9	19.3	74.3	68.8	13.8	11.9
1959	109	8.4	16.5	26.6	61.5	50.5	22.0	22.9
Northwest Territories 1956	146	7.7	65.1	73.3	19.9	19.2	15.1	7.5
1957	162	8.5	64.2	72.8	26.5	19.8	9.3	7.4
1958	148	7.4	66.9	70.3	21.6	20.3	11.5	9.5
1959	130	6.2	57.7	66.9	24.6	24.6	17.7	8.5
Canada[1] 1941	**121,842**	**10.6**	**76.8**	**81.5**	**11.4**	**10.1**	**11.7**	**8.4**
1951	**128,230**	**9.2**	**70.5**	**76.5**	**15.1**	**12.8**	**14.5**	**10.6**
1956	**132,713**	**8.3**	**67.8**	**74.7**	**15.2**	**12.4**	**17.0**	**12.9**
1957	**133,186**	**8.0**	**66.3**	**72.8**	**15.0**	**12.2**	**18.7**	**14.9**
1958	**131,525**	**7.7**	**65.4**	**71.8**	**14.5**	**11.8**	**20.1**	**16.5**
1959	**132,474**	**7.6**	**65.9**	**72.6**	**14.5**	**11.5**	**19.6**	**15.9**

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[1] Newfoundland included from 1951 and the Yukon and Northwest Territories from 1956.

Age and Marital Status of Brides and Bridegrooms.—Table 20 shows that over 91 p.c. of the marriages in 1959 were between persons who had not been married previously; 4.8 p.c. of brides and 4.4 p.c. of bridegrooms had been widowed, and almost 4 p.c. of the marriages were of divorced persons. The average age at marriage of bachelors was just under 26 years and that of spinsters just over 23 years. The average age of widowers and widows at time of remarriage was slightly more than double that of bachelors and spinsters. Over 91 p.c. of the spinsters married in 1959 were under 30 years of age, 34 p.c. were under 20 years and 45 p.c. were between 20 and 25. Over 84 p.c. of th bachelors were under 30 years of age, 7 p.c. of them under 20 and nearly 50 p.c. from 2 to 24 years of age.

In recent years, couples have been marrying younger than they did a generation ago Since 1940 the average age of men at the time of their first marriage has dropped from 2 years to less than 26; that of girls from 24 years and eight months to 23 years and on month.

20.—Brides and Bridegrooms, by Age and Marital Status, 1959

Age Group	Brides							
	Numbers				Percentages			
	Spinsters	Widows	Divorced	Total	Spinsters	Widows	Divorced	Total
Under 20 years	40,836	13	34	40,883	33.8	0.2	0.7	30.9
20 — 24 "	54,438	152	632	55,222	45.0	2.4	12.2	41.7
25 — 29 "	15,528	380	1,174	17,082	12.8	6.0	22.6	12.9
30 — 34 "	5,191	523	1,144	6,858	4.3	8.3	22.1	5.2
35 — 39 "	2,467	676	904	4,047	2.0	10.7	17.4	3.1
40 — 44 "	1,055	704	596	2,355	0.9	11.1	11.5	1.8
45 — 49 "	677	869	385	1,931	0.6	13.7	7.4	1.5
50 — 54 "	360	821	195	1,376	0.3	13.0	3.8	1.0
55 — 59 "	224	738	81	1,043	0.2	11.7	1.6	0.8
60 — 64 "	105	567	29	701	0.1	9.0	0.6	0.5
65 years or over	73	887	11	971	0.1	14.0	0.2	0.7
Totals, Stated Ages	**120,954**	**6,330**	**5,185**	**132,469**	**100.0**	**100.0**	**100.0**	**100.0**
Age not stated	5	—	—	5	--	—	—	--
Totals, All Ages	**120,959**	**6,330**	**5,185**	**132,474**	**91.3**	**4.8**	**3.9**	**100.0**
Average ages	23.1	49.1	34.6	24.8	...	...	...	...

Age Group	Bridegrooms							
	Numbers				Percentages			
	Bachelors	Widowers	Divorced	Total	Bachelors	Widowers	Divorced	Total
Under 20 years	8,573	—	3	8,576	7.1	—	0.1	6.5
20 — 24 "	60,544	36	219	60,799	49.9	0.6	4.2	45.9
25 — 29 "	33,325	165	866	34,356	27.5	2.8	16.6	25.9
30 — 34 "	11,008	253	1,149	12,410	9.1	4.3	22.0	9.4
35 — 39 "	4,050	358	1,018	5,426	3.3	6.1	19.5	4.1
40 — 44 "	1,669	443	726	2,838	1.4	7.5	13.9	2.1
45 — 49 "	1,019	645	548	2,212	0.8	10.9	10.5	1.7
50 — 54 "	495	669	357	1,521	0.4	11.4	6.8	1.1
55 — 59 "	367	762	186	1,315	0.3	12.9	3.6	1.0
60 — 64 "	156	851	90	1,097	0.1	14.4	1.7	0.8
65 years or over	156	1,710	53	1,919	0.1	29.0	1.0	1.4
Totals, Stated Ages	**121,362**	**5,892**	**5,215**	**132,469**	**100.0**	**100.0**	**100.0**	**100.0**
Age not stated	5	—	—	5	--	—	—	--
Totals, All Ages	**121,367**	**5,892**	**5,215**	**132,474**	**91.6**	**4.4**	**3.9**	**100.0**
Average ages	25.9	55.7	38.3	27.7	...	...	...	...

Religious Denominations of Brides and Bridegrooms.—The distribution of brides and bridegrooms by religious denominations is roughly the same as that for the population as a whole. Table 21 shows the very strong influence that religion has on marriage. About 72 p.c. of all marriages are between persons of the same religious denomination; in 1959 among those of Jewish faith it was about 91 p.c.; among Roman Catholics about 88 p.c.; United Church about 61 p.c.; and Eastern Orthodox about 68 p.c.

21.—Marriages by Religious Denominations of Contracting Parties, 1959

Denomination of Bridegroom	Denomination of Bride										Total Marriages	P.C. of Grooms
	Anglican	Baptist	Eastern Orthodox	Jewish	Lutheran	Presbyterian	Roman Catholic[1]	United Church	Other Sects	Not Stated		
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	
Anglican	7,531	573	80	15	377	710	1,852	3,367	559	4	15,068	11.4
Baptist	602	2,098	20	3	110	182	447	865	272	—	4,599	3.5
Eastern Orthodox	127	21	1,738	—	102	36	375	234	55	—	2,688	2.0
Jewish	41	9	6	1,377	14	14	58	28	21	—	1,568	1.2
Lutheran	552	152	59	6	2,632	174	980	912	317	—	5,784	4.4
Presbyterian	845	185	26	4	145	1,842	610	1,166	199	—	5,022	3.8
Roman Catholic[1]	1,877	364	257	24	884	536	55,787	2,325	871	6	62,931	47.5
United Church	3,198	867	161	15	633	1,104	2,356	15,060	858	3	24,255	18.3
Other	668	293	56	12	317	217	1,123	1,183	6,652	5	10,526	7.9
Not stated	6	—	1	—	3	—	7	6	1	9	33	--
Totals	**15,447**	**4,562**	**2,404**	**1,456**	**5,217**	**4,815**	**63,595**	**25,146**	**9,805**	**27**	**132,474**	**100.0**
P.C. of brides	11.7	3.4	1.8	1.1	3.9	3.6	48.0	19.0	7.4	--	100.0	71.5[2]

[1] Includes Greek Catholic.

[2] Percentage of marriages between contracting parties of the same religious denomination.

Subsection 2.—Dissolutions of Marriage (Divorces)

Before World War I the number of divorces granted in Canada was very small. There were fewer than 20 divorces each year from Confederation to 1900, 21 in 1903, 51 in 1909 and 60 in 1913. These numbers represent less than one per 1,000 of the yearly number of marriages. At the end of World War I the number of divorces showed a definite increase, advancing to a peak of 8,199 in 1947, then declining gradually to a postwar low of 5,270 in 1951. From 1952 to 1958 the number fluctuated between 5,650 and 6,688, and in 1959 stood at 6,222.

22.—Dissolutions of Marriage (Divorces), by Province, 1936-59

Note.—Figures for individual years from 1900 to 1950 are given in the 1956 Year Book, p. 230.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Av. 1936–40	..	1	50	44	56	734	194	116	259	570	2,024
" 1941–45	..	2	92	104	99	1,398	305	207	432	937	3,576
" 1946–50	1	21	185	245	303	2,839	500	383	724	1,676	6,877
1951	4	10	187	156	289	2,109	361	226	589	1,339	5,270
1952	3	9	188	200	309	2,218	338	223	630	1,532	5,650
1953	9	15	185	181	273	2,824	374	218	603	1,478	6,160
1954	8	8	249	117	370	2,469	371	250	610	1,471	5,923
1955	1	7	253	181	396	2,531	337	237	627	1,483	6,053
1956	5	1	230	215	351	2,478	314	221	685	1,502	6,002
1957	6	2	250	206	519	2,873	305	242	726	1,559	6,688
1958	7	1	220	150	311	2,776	292	281	743	1,498	6,279
1959	1	6	215	221	351	2,595	301	276	836	1,420	6,222

Section 6.—Canadian Life Tables

Four official series of life tables for Canada and the provinces and regions have been published to date, based on deaths in the three-year period around each of the Censuses of 1931, 1941, 1951 and 1956. In addition, tables have been computed for Canada as a whole for the years 1945 and 1947 based on estimated populations by sex and age and the deaths recorded in those years. The life table values for 1956 are given in abbreviated form in Table 23.

Life tables give a summary of the health and general conditions of survival of the population in a conventional, standard form. A hypothetical number (100,000) of births of each sex is assumed as a starting point. The life tables show how, on the basis of the mortality rates at each age in the given years, these 100,000 of each sex are reduced in number by death. For example, during the year 1956, of 100,000 males born, 3,472 died in their first year so that 96,528 survived to one year of age; 241 died in their second year so that 96,287 survived to two years of age, and so on. At 100 years of age only 87 of the original 100,000 would have survived. The probability of death at each age is the ratio between the number of deaths and the population at each age. Finally, the expectation of life is the average number of years which a person might expect to live if the mortality rates in the given years remained constant.

Mortality rates at all ages for males have been almost consistently higher than for females. Males have the highest risk of mortality as compared with females during their first year of life, from their late 'teens to early 30's and from age 50 to 65. For both boys and girls the risk of mortality drops rapidly during childhood and is lowest at about age 10, increases gradually to about age 40 for males and about 50 for females and then rises steeply with advancing age. At the mortality rates given in the 1956 life table (see Table 23) about 13,000 males would have died before reaching age 50 as compared with about 8,700 females; only 56,466 of the original group of 100,000 males would have survived to age 70 as compared with 70,327 females.

23.—Canadian Life Table, 1956

Age	Males				Females			
	Number Living at Each Age	Number Dying Between Each Age and the Next	Probability of Dying Before Reaching Next Birthday	Expectation of Life	Number Living at Each Age	Number Dying Between Each Age and the Next	Probability of Dying Before Reaching Next Birthday	Expectation of Life
				yrs.				yrs.
At birth..........	100,000	3,472	.03472	67.61	100,000	2,767	.02767	72.92
1 year............	96,528	241	.00250	69.04	97,233	210	.00216	73.99
2 years...........	96,287	139	.00144	68.21	97,023	116	.00120	73.15
3 "	96,148	111	.00115	67.31	96,907	90	.00093	72.24
4 "	96,037	91	.00095	66.38	96,817	68	.00070	71.31
5 "	95,946	335	.00083	65.45	96,749	227	.00058	70.35
10 "	95,611	314	.00057	60.67	96,522	192	.00037	65.51
15 "	95,297	598	.00099	55.86	96,330	256	.00047	60.64
20 "	94,699	802	.00160	51.19	96,074	312	.00060	55.80
25 "	93,897	781	.00169	46.61	95,762	396	.00075	50.97
30 "	93,116	844	.00172	41.98	95,366	498	.00094	46.17
35 "	92,272	1,055	.00202	37.34	94,868	711	.00127	41.40
40 "	91,217		.00288	32.74	94,157		.00194	36.69

23.—Canadian Life Table, 1956—concluded

Age	Males: Number Living at Each Age	Males: Number Dying Between Each Age and the Next	Males: Probability of Dying Before Reaching Next Birthday	Males: Expectation of Life	Females: Number Living at Each Age	Females: Number Dying Between Each Age and the Next	Females: Probability of Dying Before Reaching Next Birthday	Females: Expectation of Life
		1,597		yrs.		1,105		yrs.
45 years..........	89,620	2,605	.00472	28.28	93,052	1,731	.00312	32.09
50 "	87,015	4,162	.00794	24.04	91,321	2,575	.00475	27.65
55 "	82,853	6,252	.01282	20.12	88,746	3,955	.00744	23.38
60 "	76,601	8,864	.02037	16.54	84,791	5,942	.01191	19.34
65 "	67,737	11,271	.03057	13.36	78,849	8,522	.01864	15.60
70 "	56,466	13,360	.04425	10.51	70,327	12,103	.02955	12.17
75 "	43,106	14,989	.06776	7.98	58,224	16,541	.05137	9.15
80 "	28,117	13,865	.10611	5.89	41,683	17,866	.08717	6.75
85 "	14,252	9,308	.16187	4.27	23,817	13,887	.13640	4.97
90 "	4,944	3,960	.23784	3.07	9,930	7,214	.19889	3.67
95 "	984	897	.33684	2.18	2,716	2,289	.27446	2.74
100 "	87		.46169	1.52	427		.36294	2.05

By 1956, life expectancy at birth in Canada had reached a new high record of 67.6 years for males and 72.9 for females—comparable to the expectancy for other countries of the world with highly developed programs of medical and public health care. Once a child has passed its first year of life, however, its life expectancy increases appreciably. At one year of age a male child at present mortality risks may, on the average, expect to live an additional 69.0 years and a female 74.0 years, representing for an infant boy a gain of 1.4 years over his expectation at birth and for an infant girl a gain of 1.1 years. The expectation of life of a 15-year-old boy is 55.9 additional years; of a 15-year-old girl 60.6 years. At 25 years of age the expectation is about 46.6 years for men and almost 51 years for women and at age 70, 10.5 years for men and 12.2 years for women.

Table 24 summarizes the life expectancy figures extracted from the Canadian life tables for 1931, 1941, 1951 and 1956. According to these figures, life expectancy at birth for men increased 1.3 years from 1951 to 1956 compared with 3.4 years from 1941 to 1951 and 2.9 years from 1931 to 1941; females gained 2.1 years from 1951 to 1956 compared with 4.5 years and 4.2 years, respectively, in the preceding decades. Thus, from 1931 to 1956 a total of 7.6 years was added to male life expectancy and 10.8 years to female longevity.

The increases in life expectancy have been predominantly at the younger ages, particularly in infancy, and diminish with advanced age. For example, since 1931, 3.2 years have been added to the life expectancy of a five-year-old male, 2.1 years to a 20-year-old, nine months to a 40-year-old and three months to a 60-year-old as compared with 7.6 years for a newborn male. During this period, life expectancy for a five-year-old female gained 7.2 years, for a 20-year-old 6.0 years, for a 40-year-old 3.7 years and for a 60-year-old 2.2 years as compared with 10.8 years for a newborn female.

Longevity has improved for both sexes, though more so and at all ages for females, but there has been only slight improvement for males beyond middle life. Briefly, the rapid decline in the death rate for infants of both sexes is continuing but the declines are slower with advancing age, so that relatively stationary death rates have been establishe from about 50 years onwards for males and from about 80 years onwards for females.

The fact that such a pattern exists is important in interpreting the results of thes life tables. The arbitrary population base of 100,000 of each sex in the 1956 tables, fo example, has been subjected to the mortality rates in effect in 1955-57, and the life expectancy computed as if those death rates at each age were to prevail during their lifetime Actually the theoretical 200,000 infants born in 1955-57 will most probably have a patter of survival and life expectancy quite different from that of the present life tables as the will spend most of their lives under conditions of public health and medical care which i all likelihood will be superior to those prevailing in 1955-57.

The improvement in life expectancy, particularly among children and adolescents is caused mainly by the substantial reduction in recent years in mortality from infectiou diseases; on the other hand, diseases associated with middle and old age are much les amenable to control. It is therefore unlikely that improvement in life expectancy in th future will be comparable to that of the past quarter-century. As approximately 11 p.c of deaths in 1955-57 occurred among infants and an additional 75 p.c. among persons ove age 50, any additional improvement must come as the result of further declines in mortalit from conditions associated with childbirth and early infancy, further control of infectiou diseases, prevention of accidents, and advances in combating diseases associated wit middle and old age, such as cardiovascular-renal conditions and cancer.

24.—Expectation of Life 1931, 1941, 1951 and 1956

Age	1931		1941		1951		1956	
	Male	Female	Male	Female	Male	Female	Male	Female
	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.
At birth	60.00	62.10	62.96	66.30	66.33	70.83	67.61	72.92
1 year	64.69	65.71	66.14	68.73	68.33	72.33	69.04	73.99
2 years	64.46	65.42	65.62	68.16	67.56	71.55	68.21	73.15
3 “	63.84	64.75	64.88	67.38	66.68	70.66	67.31	72.24
4 “	63.11	63.99	64.07	66.56	65.79	69.74	66.38	71.31
5 “	62.30	63.17	63.22	65.69	64.86	68.80	65.45	70.35
10 “	57.96	58.72	58.70	61.08	60.15	64.02	60.67	65.51
15 “	53.41	54.15	54.06	56.36	55.39	59.19	55.86	60.64
20 “	49.05	49.76	49.57	51.76	50.76	54.41	51.19	55.80
25 “	44.83	45.54	45.18	47.26	46.20	49.67	46.61	50.97
30 “	40.55	41.38	40.73	42.81	41.60	44.94	41.98	46.17
35 “	36.23	37.19	36.26	38.37	37.00	40.24	37.34	41.40
40 “	31.98	33.02	31.87	33.99	32.45	35.63	32.74	36.69
45 “	27.79	28.87	27.60	29.67	28.05	31.14	28.28	32.09
50 “	23.72	24.79	23.49	25.46	23.88	26.80	24.04	27.65
55 “	19.88	20.84	19.64	21.42	20.02	22.61	20.12	23.38
60 “	16.29	17.15	16.06	17.62	16.49	18.64	16.54	19.34
65 “	12.98	13.72	12.81	14.08	13.31	14.97	13.36	15.60
70 “	10.06	10.63	9.94	10.93	10.41	11.62	10.51	12.17
75 “	7.57	7.98	7.48	8.19	7.89	8.73	7.98	9.15
80 “	5.61	5.92	5.54	6.03	5.84	6.38	5.89	6.75
85 “	4.10	4.38	4.05	4.35	4.27	4.57	4.27	4.97
90 “	2.97	3.24	2.93	3.13	3.10	3.24	3.07	3.67
95 “	2.14	2.40	2.09	2.26	2.24	2.27	2.18	2.74
100 “	1.53	1.77	1.46	1.64	1.60	1.59	1.52	2.05

Section 7.—International Comparisons of Vital Statistics

Table **25** gives a summary of Canada's national and provincial vital statistics rate along with those of several other countries. It will be noted that among the countrie listed the low crude death rate in Canada is bettered by only three countries—the Unio of Soviet Socialist Republics, Japan and the Netherlands—and that some of the province have lower rates than most other countries. The birth rate also helps to give Canada on of the fastest growing populations, currently ranking sixth among those listed. Howeve ten countries reported lower rates of infant mortality.

25.—Principal Vital Statistics Rates of Selected Countries, 1959

NOTE.—Countries are ranked according to the highest rates for births, marriages and natural increase and according to the lowest for deaths.

SOURCE: United Nations publications.

Country or Province	Births		Deaths		Infant Mortality		Neo-natal Mortality[1]		Maternal Mortality		Marriages		Natural Increase	
	Rate[2]	Rank	Rate[2]	Rank	Rate[3]	Rank	Rate[3]	Rank	Rate[3]	Rank	Rate[2]	Rank	Rate[2]	Rank
Australia	22.6	14	8.9	7	21[4]	4	15[4]	4	0.5[4]	3	7.4	15	13.7	11
Austria	17.5	25	12.4	24	40	15	25	13	0.8[4]	6	8.3	8	5.1	24
Belgium	17.2	26	11.8	20	30	11	22[5]	11	0.6[4]	4	7.1	17	5.4	23
Canada	**27.5**	**6**	**8.0**	**4**	**28**	**9**	**18**	**7**	**0.5**	**3**	**7.6**	**13**	**19.5**	**6**
Newfoundland	33.0	...	7.1	...	39	...	22	...	0.8	...	6.4	...	25.9	...
Prince Edward Island	26.7	...	9.9	...	31	...	19	...	—	...	6.3	...	16.8	...
Nova Scotia	26.6	...	8.9	...	31	...	20	...	0.4	...	7.4	...	17.7	...
New Brunswick	27.9	...	8.0	...	33	...	19	...	0.4	...	7.3	...	19.9	...
Quebec	28.5	...	7.3	...	33	...	21	...	0.7	...	7.4	...	21.2	...
Ontario	26.4	...	8.5	...	24	...	17	...	0.5	...	7.8	...	17.9	...
Manitoba	25.8	...	8.4	...	27	...	16	...	0.6	...	7.5	...	17.4	...
Saskatchewan	27.0	...	7.8	...	26	...	18	...	0.4	...	7.1	...	19.2	...
Alberta	30.6	...	6.8	...	24	...	16	...	0.4	...	8.4	...	23.8	...
British Columbia	25.5	...	9.1	...	25	...	16	...	0.4	...	7.6	...	16.4	...
Yukon	41.3	...	6.8	...	26	...	7	...	—	...	8.4	...	34.5	...
Northwest Territories	47.1	...	13.8	...	129	...	54	...	5.1	...	6.2	...	33.3	...
Ceylon	35.8[4]	4	9.7[4]	13	68[5]	19	39[5]	17	3.9[4]	14	6.1[4]	22	26.1[4]	4
Chile	33.5	5	12.5	25	127[4]	24	37[4]	16	3.2[4]	13	7.4	15	21.0	5
Denmark	16.3	28	9.4	10	23	6	16[4]	5	0.4[4]	2	7.2	16	6.9	21
England and Wales	16.5	27	11.6	19	22	5	16	5	0.4	2	7.5	14	4.9	25
Finland	18.9	20	8.8	6	24	7	15[4]	4	1.0[4]	7	7.2	16	10.1	16
France	18.4	21	11.3	18	30	11	18	7	0.6[4]	4	7.1	17	7.1	19
Germany, Federal Republic of	17.6	24	10.8	16	34	13	23	12	1.2[4]	9	9.2	2	6.8	22
India[6]	25.7	7	12.1	23	96[5]	23	..	..	..	..	..	..	13.6	12
Ireland	21.1	18	12.0	22	32	12	21	10	0.7	5	5.4	24	9.1	17
Italy	18.4	21	9.3	9	45	17	26[5]	14	1.1[4]	8	7.8	11	9.1	17
Japan	17.5	25	7.4	2	35[4]	14	22[5]	11	1.5[4]	11	9.1	3	10.1	16
Mexico	47.0	2	11.9	21	74	20	28[5]	15	2.2[5]	12	6.4	20	35.1	2
Netherlands	21.3	17	7.6	3	17	2	12	1	0.4[4]	2	7.8	11	13.7	11
New Zealand	25.1	10	9.1	8	20	3	14[4]	3	0.4[4]	2	7.9	10	16.0	9
Northern Ireland	21.9	15	10.9	17	28	9	20	9	0.6	4	6.8	18	11.0	15
Norway	18.0	22	8.9	7	20[5]	3	12[5]	1	0.5[4]	3	6.5	19	9.1	17
Peru	36.5	3	10.1	15	88[4]	21	..	..	..	..	3.5	25	26.4	3
Portugal	23.5	12	10.8	16	88	21	26[4]	14	1.2[4]	9	8.4	7	12.7	14
Scotland	19.1	19	12.1	23	28	9	19	8	0.4	2	7.8	11	7.0	20
Spain	21.6	16	8.9	7	41	16	..	..	0.8[5]	6	8.1	9	12.7	14
Sweden	14.1	29	9.5	11	16	1	13	2	0.3[4]	1	6.3	21	4.6	26
Switzerland	17.8	23	9.6	12	22	5	17[7]	6	0.8[4]	6	7.7	12	8.2	18
Union of South Africa (Whites)	25.4	8	8.6	5	29[4]	10	19[7,8]	8	0.5[5]	3	9.0[4]	4	16.8	8
Union of Soviet Socialist Republics	25.3[4]	9	7.2[4]	1	41[4]	16	..	..	..	..	12.5[4]	1	18.1[4]	7
United States	24.1	11	9.4	10	26	8	19	8	0.4	2	8.5	6	14.7	10
Venezuela	50.8	1	9.3	9	65[4]	18	28[5]	15	1.4[4]	10	5.8	23	41.5	1
Yugoslavia	23.1	13	9.8	14	91	22	37[5]	16	0.3[5]	1	8.7	5	13.3	13

[1] Under four weeks unless otherwise stated. [2] Per 1,000 population. [3] Per 1,000 live births. [4] 1958. [5] 1957. [6] Registration area only.
[7] Under one month. [8] 1955.

CHAPTER VI.—PUBLIC HEALTH, WELFARE AND SOCIAL SECURITY*

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Canada's postwar growth has presented a challenge in the planning of health an welfare services. Population has increased by one-half in this period. General high level of prosperity, growing urbanization, larger numbers of both young and old in the population, and new concepts and knowledge in health and welfare matters have all contribute to needs for additional services and to greater interdependence between the differen health and welfare professions.

During 1960, the Hospital Insurance and Diagnostic Services Act, proclaimed i 1957, became nation-wide for in-patient general hospital services, and some provincia plans were moving in the direction of extended coverage for special hospital and outpatient care. During the year, more than two and one-half million patients were admitte to general hospitals and over 90 p.c. of the almost one-half million births occurred i hospital. Insurance for medical care in Canada was still largely based on voluntar prepayment plans; approximately one-half the population carried some medical insuranc The possibility of government participation in public medical care, beyond the specia provision existing for certain indigent groups, received increasing public attention.

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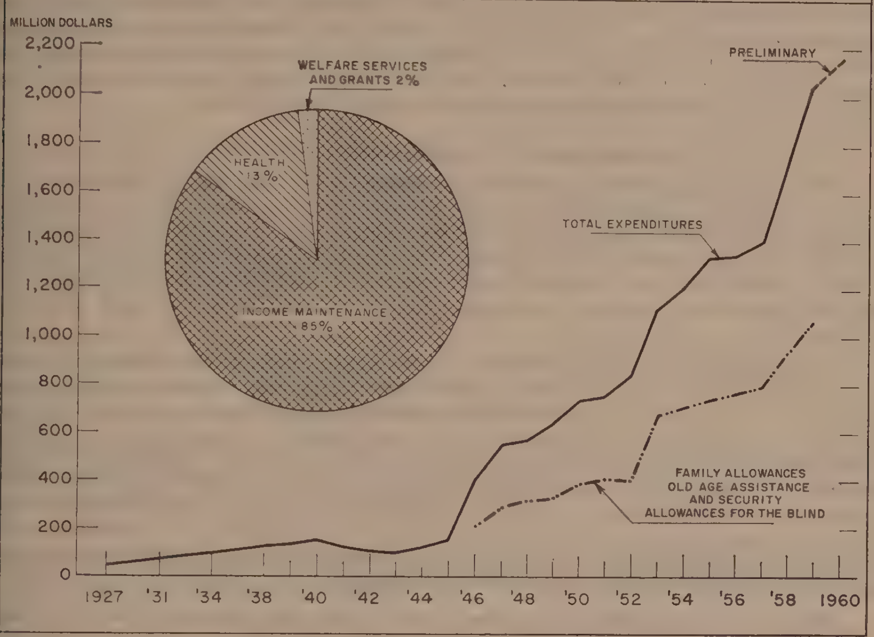
* Except where otherwise indicated, this Chapter was prepared by the Research and Statistics Division of t Department of National Health and Welfare, Ottawa.

FEDERAL EXPENDITURES ON HEALTH AND SOCIAL WELFARE
YEARS ENDED MAR. 31, 1928–60



Development in the sciences related to medicine, improved health services and raised nutritional and other standards are contributing to generally favourable health conditions—to a declining death rate and a longer expectation of life. Progress against the contagious diseases emphasizes the problems presented by chronic illness and the disabilities of persons in the older age groups. Heart and hypertensive disease, arthritis and rheumatism are among the leading causes of disability, though residual disability from stroke, Parkinson's disease, epilepsy and multiple sclerosis also accounts for large numbers of disabled persons. The death rate for lung cancer continues to increase and cause controversy, and mental illness remains a major problem. Accidents, especially traffic accidents, constitute a steady and tragic problem particularly as they affect children. Also, Canada now shares the world-wide concern for the hazards of radiation from medical and industrial causes as well as from fallout.

Progress in the welfare field also continues to be substantial and efforts are concentrated on remaining problems, some of which are of considerable magnitude. Rapid urbanization, increasing numbers of older persons in the population and large-scale immigration are among the forces requiring new social approaches. On the other hand, the growth of the industrial community in Canada has been associated with a marked improvement in the general standard of living. Higher real income has permitted better levels of nutrition and better housing, and improved working conditions and shorter working hours have benefited the industrial worker. During the past decade, urban technical and health services have been extended to the rural population of the country, so that many of the improvements in the national standard of living are being shared more equally by the urban and rural populations.

PART I.—PUBLIC HEALTH

Section 1.—Federal, Provincial and Local Health Services

Provincial governments bear the major responsibility for health services in Canada, with the municipality often assuming considerable authority over matters delegated to it by provincial legislation. The Federal Government has jurisdiction over a number of health matters of a national character and provides important financial assistance to provincial health and hospital services. All levels of government are aided and supported by a network of voluntary agencies working in different health fields.

Subsection 1.—Federal Health Activities

The Department of National Health and Welfare is the chief federal agency in health matters, but important treatment programs are also administered by the Departments of Veterans Affairs and National Defence. The Dominion Bureau of Statistics is responsible for the collection, analysis and publication of health statistics, the Medical Research Council and the Defence Research Board administer medical research programs, and the Department of Agriculture has certain health responsibilities connected with food production.

The Department of National Health and Welfare controls food and drugs, including narcotics (see pp. 242-248), operates quarantine and immigration medical services, carries out international health obligations, and provides health services to Indians, Eskimos and other special groups. It advises on the visual eligibility of applicants for blindness allowances and co-operates with the provinces in the provision of surgical or remedial treatment for recipients of the allowances. Under the Public Works Health Act, supervision of health conditions is provided for persons employed on federal public works. Other programs of health or medical supervision and counselling are provided to the federal Civil Service and to the Department of Transport in all matters pertaining to the safety, health and comfort of aircrew and passengers.

The Department serves in an advisory and co-ordinating capacity to the provinces and administers grants to provincial health and national voluntary agencies. Administration of federal aspects of the Hospital Insurance and National Health Grant Program has become a major activity during the past decade.

Co-ordination with the provinces on health matters is facilitated by the Dominion Council of Health, the principal advisory agency to the Minister of National Health and Welfare. Its membership includes the Deputy Minister of National Health, who acts as chairman, the chief health officer of each province, and five appointees of the Governor in Council representing the universities, labour, agriculture and French- and English-speaking women's organizations. The Council meets semi-annually. Federal-provincial technical advisory committees of the Council deal with specific aspects of public health.

National Health Grant Program.—The National Health Grant Program, inaugurated in 1948, initially made ten federal grants available to the provinces for the development and strengthening of public health and hospital services. Nine are continuing grants: the Hospital Construction, Professional Training, General Public Health, Public Health Research, Mental Health, Tuberculosis Control, Cancer Control, Venereal Disease Control, and Crippled Children Grants. A Health Survey Grant lapsed in 1953 following completion of provincial health surveys. In 1953, after a review of the first five years of the Program, three new grants were established: Child and Maternal Health, Medical Rehabilitation, and Laboratory and Radiological Services.

In 1958, federal assistance under the Hospital Construction Grant was increased to $2,000 per hospital bed (whether active treatment, chronic, mental or tuberculosis), double the previous grant for active treatment beds. In addition, funds were made available to meet up to one-third of the cost of approved alterations and renovations to existing facilities, with the provinces at least matching federal contributions.

Beginning with the fiscal year 1959-60, a redistribution and merging of certain grants was effected to provide a more flexible measure of assistance and at the same time make larger amounts available for programs where additional aid was necessary. Adjustments were also required for services aided under different grants, such as laboratory and radiological services and cancer control, now aided under the Hospital Insurance Program. The total allocation remained approximately the same but the number of separate grants was reduced to nine. The General Public Health Grant was increased by almost $5,500,000 and projects under two previously separate grants—the Laboratory and Radiological Services Grant and the Venereal Disease Control Grant—were absorbed into it. The Medical Rehabilitation and Crippled Children Grants were merged and the combined allocation increased by more than $1,000,000. The Mental Health Grant was increased by more than $1,500,000, and the Professional Training and the Public Health Research Grants by about $1,250,000 each. The Tuberculosis Control was decreased by nearly $750,000 and the Child and Maternal Health and Cancer Control Grants by lesser amounts. The grants for professional training and public health research, previously fixed amounts, were placed on a per capita basis, to increase with expansion of the population.

Up to Mar. 31, 1960, aid for hospital construction was approved for 84,111 beds, 10,852 bassinets, 16,974 nurses' beds, 436 interns' beds, and space in community health centres and laboratories exceeding 12,561 bed equivalents. Approximately 26,275 health workers had been trained or were undergoing special training and more than 6,000 health workers had been employed with federal grant assistance.

The proportion of the total grants appropriation paid out to the provinces has increased steadily. Payments in 1959-60 totalled $45,997,410 or 84 p.c. of the amount available; the average utilization during twelve years of the program was 75 p.c.

1.—Amounts Available and Amounts and Percentages Expended under the National Health Grant Program, by Grant, for the Twelve-Year Period Ended Mar. 31, 1960, and for the Year Ended Mar. 31, 1960.

Grant	1948-60 Period			Year Ended Mar. 31, 1960		
	Amount Available	Amount Expended[1]	Percentage Expended	Amount Available	Amount Expended[1]	Percentage Expended
	$	$		$	$	
Cancer Control	46,664,448	32,448,864	69.5	3,598,795	3,328,146	92.5
Crippled Children	6,727,626	4,844,905	72.0	519,898	503,568	96.9
General Public Health	92,855,101	64,737,897	69.7	8,524,000	8,668,716	101.7
Health Survey	645,180	540,960	83.8	—	—	—
Hospital Construction	153,582,532	133,042,985	86.6	17,367,320	14,940,580	86.0
Mental Health	81,485,751	64,088,830	78.7	7,234,868	7,690,718	106.3
Professional Training	6,695,244	7,055,823	105.4	516,300	655,703	127.0
Public Health Research	5,639,948	4,767,839	84.5	512,900	443,894	86.5
Tuberculosis Control	52,784,393	48,810,744	92.5	4,239,531	3,796,324	89.5
Venereal Disease Control	6,486,435	5,589,391	86.2	518,099	441,296	85.2
Child and Maternal Health	13,500,000	9,085,963	67.3	2,000,000	1,842,162	92.1
Laboratory and Radiological Services	55,698,800	17,965,282	32.3	8,524,000	3,012,904	35.3
Medical Rehabilitation	7,500,000	3,708,363	49.4	1,000,000	673,399	67.3
Totals	**530,265,458**	**396,687,846**	**74.8**	**54,555,711**	**45,997,410**	**84.3**

[1] Expenditures may exceed amounts available, through transfer of unexpended funds from one grant to another.

Hospital Insurance.—On Jan. 1, 1961, with the entry of Quebec, the federal-provincial hospital insurance program became nation-wide with publicly financed hospital insurance plans established in all provinces and both territories. The basis of federal grants-in-aid to the provinces to help meet the cost of specified hospital services is set out under the federal Hospital and Diagnostic Services Act of 1957. The method of financing and administering the provincial plans, as well as the types of services offered above the minimum stipulated in the Act, rests with the provinces.

The range of in-patient benefits provided under the Act includes standard ward accommodation and meals, nursing service, drugs and biologicals, surgical supplies, use of operating and case-room, X-ray and laboratory procedures together with necessary medical interpretations, and the use of radiotherapy and physiotherapy facilities where available. The same benefits for out-patients, although authorized for assistance under the federal legislation, are not mandatory in provincial plans. A few provinces provide various insured services to out-patients but the majority thus far restrict out-patient benefits to emergency care following an accident.

Federal legislation covers only services provided by active treatment, chronic and convalescent hospitals. Tuberculosis and mental hospitals are excluded from the federal-provincial plan as well as institutions providing custodial care, though some provinces cover tuberculosis and mental services under the provincial programs.

There is considerable variation between provinces in the administration and financing of programs. General revenues, provincial sales tax and personal premiums are utilized in different provinces. The Federal Government pays each province 25 p.c. of the per capita cost of in-patient services in Canada as a whole, together with 25 p.c. of the per capita cost of in-patient services in a province multiplied by the average for the year of the number of insured persons in the province. On a national basis the federal contribution amounts to about 50 p.c. of shareable costs. However, for individual provinces the proportion of shareable costs met by the Federal Government varies, with a higher proportion of the cost of low-cost programs being met than of high-cost programs. Federal payments to the provinces under the program from July 1, 1958 to Dec. 31, 1959 totalled approximately $165,000,000.

Food and Drug Control.*—The Food and Drugs, Proprietary or Patent Medicine, and Opium and Narcotic Drug Acts govern the safety, purity and quality as well as the labelling and advertising of all foods, drugs, therapeutic devices and cosmetics. Standards of safety and purity are maintained through constant and widespread inspection and laboratory research. Standards governing ingredients are formulated and methods of analysis developed in the central Food and Drugs laboratory, where special research is also carried on to establish the safety of new products. Several panels of experts advise on technical and medical problems.

Regulation of the domestic supply of narcotic drugs is maintained through a system of licensed distributors and reports of all stocks subsequently sold or dispensed. Enforcement of the provisions concerning illicit traffic is carried out in collaboration with the Royal Canadian Mounted Police.

Indian and Northern Health Services.—The Department of National Health and Welfare makes available public health, medical and hospital services to a registered population of about 180,000 Indians and 12,000 Eskimos. This program is administered by the Directorate of Indian and Northern Health Services in collaboration with the government departments responsible for the general welfare of these groups—the Department of Citizenship and Immigration for Indians and the Department of Northern Affairs and National Resources for Eskimos.

Services are provided directly to about 2,000 small scattered groups through a network of 22 hospitals, 30 clinics, 38 nursing stations and about 80 other health centres staffed by full-time medical officers, graduate nurses, and other health personnel. In areas where departmental staff or facilities are not located, private practitioners and provincial or community health agencies provide care in return for fees for service, payment of per diem rates or through other arrangements. Special emphasis is placed on communicable disease control through health education, field X-ray surveys, protective vaccinations and early treatment where required.

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* This subject is covered in detail in a special article entitled "Federal Food and Drug Legislation in Canada' pp. 242-248.

Immigrants.—The Department of National Health and Welfare advises on the administration of sections of the Immigration Act dealing with health, and conducts in Canada and other countries the medical examination of applicants for immigration. It also provides care for immigrants who become ill en route to their destination or while awaiting employment. Further assistance in the provision of hospital and medical services is available to indigent immigrants during their first year in Canada, either from the Federal Government or from the province with federal sharing of costs.

Quarantine.—Under the Quarantine Act, all vessels, aircraft and other conveyances together with their crew members and passengers arriving in Canada from foreign countries are inspected by quarantine officers to detect and correct conditions that could lead to the entry and spread of quarantinable diseases in Canada. Fully organized quarantine stations are located at all major seaports and airports.

Under the provisions of the Leprosy Act, modern facilities for the diagnosis and treatment of leprosy are provided at Tracadie, N.B., for the small number of persons in Canada suffering from this disease.

Sick Mariners.—Under the authority of Part V of the Canada Shipping Act, the Department of National Health and Welfare provides prepaid health services for crew members of foreign-going ships arriving in Canada and Canadian coastal vessels in interprovincial trade; crew members of Canadian fishing and government vessels may participate on an elective basis. Hospital care of crew members having residence in Canada is the responsibility of the provincial hospital insurance authority concerned.

Health Research.*—Health research in Canada is carried on in universities, hospitals, research institutes and government departments. In the universities this work is done by departments of basic medical sciences, medical and public health departments and special departments or institutes of research. Hospitals used for teaching medical students also carry on considerable research as do some of the larger non-teaching hospitals and mental institutions.

The Department of National Health and Welfare, the Medical Research Council (established in November 1960 to take over the work formerly carried on by the National Research Council Medical Division), the Department of Veterans Affairs and the Defence Research Board support extensive programs of research. Other important research centres include the Connaught Medical Research Laboratories, the Banting Research Foundation, the Charles H. Best Institute, the Institute of Microbiology and Hygiene, the Allan Memorial Institute and the Montreal Neurological Institute. Over-all expenditures on health research in Canada cannot be established exactly, but may reach $7,000,000 or $8,000,000 annually.

International Health.—Canada actively assists and co-operates with the World Health Organization and other specialized agencies of the United Nations concerned with health. Capital and technical assistance are provided to under-developed countries through the Colombo Plan and other bilateral programs. Training in Canada is provided for a number of persons coming to Canada each year under the different technical co-operation schemes.

To carry out this country's obligations under the International Sanitary Conventions, the Department of National Health and Welfare maintains quarantine measures for ships and aircraft entering Canadian ports and provides accommodation and necessary medical care for persons arriving in Canada who require quarantine.

The Department is responsible for the enforcement of requirements governing the handling and shipping of shellfish under the International Shellfish Agreement between Canada and the United States and, at the request of the International Joint Commission, participates in studies connected with control of pollution of boundary waters between Canada and the United States and with problems caused by atmospheric pollution. Other international health responsibilities include the custody and distribution of biological, vitamin and hormone standards for the World Health Organization and certain duties in connection with the Commission on Narcotic Drugs of the United Nations.

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* See also Subsection 3 of Section 4 of that Part of the Education and Research Chapter relating to Scientific and Industrial Research.

FEDERAL FOOD AND DRUG LEGISLATION IN CANADA*

The food and drug industries and trades make up the largest group of businesses in Canada when the production, manufacturing and importation of these commodities are considered along with wholesale and retail trades. Excluding the farmers involved in production but including persons employed in retail establishments, these industries provide the livelihood of more than 190,000 Canadians in more than 60,000 businesses, large and small. Canadians spend about $5,000,000,000 a year for foods and drugs. The potential hazards to health and the possibility of serious fraud and deception in the sale and use of these commodities that are so essential to existence have prompted the passing of special legislation which exercises control over their manufacture and sale.

The present Food and Drugs Act is a federal statute with provisions applying to the manufacture, advertising, packaging and sale of foods, drugs, cosmetics and medical devices anywhere in Canada. There are no similar provincial laws. This federal law exists for the protection of the consumer; it is not intended to assist the sale of products through grading, nor does it exist to protect Canadian products from competition from abroad. Imports and domestic products are treated alike by this Act.

Food and drug legislation of some kind has been known in the world for centuries—the Assize of Bread in England as long ago as 1266 and the condemnation of carcasses of tainted beef by the mayor of the City of London in 1319. The first Canadian law of general scope was "An Act to Impose Licence Duties on the Compounders of Spirits and to Prevent the Adulteration of Food, Drink and Drugs" passed by Parliament in May 1874 and became effective on Jan. 1, 1875. In this Act the present Food and Drugs Act had its origin. There have been many minor and several major amendments to the law since 1874, the most recent being passed in 1953. The original law was the first such law of national scope in the Americas. There has been continuous enforcement since 1875.

The 1953 law has very wide scope and powers. There is authority provided (1) to establish standards of composition or identity for foods, drugs and cosmetics and standards for medical devices; (2) to prohibit the sale of foods that are dirty, harmful, rotten or disgusting, adulterated or manufactured or stored under unsanitary conditions; (3) to prohibit the sale of drugs manufactured under unsanitary conditions or that are adulterated; (4) to provide standards for all drugs; (5) to require licences for certain biological preparations and antibiotics; (6) to prohibit the sale of harmful cosmetics or those made under unsanitary conditions and to set standards for cosmetics; (7) to prohibit the sale of harmful medical devices; and (8) to prohibit the advertising, labelling, packaging or processing of foods, drugs and medical devices "in a manner that is false, misleading or deceptive or is likely to create an erroneous impression regarding its character, value, quantity, composition, merit or safety". The Act has a clause that prohibits the advertising of any food, drug, cosmetic or device to the general public as a treatment, preventative or cure for a number of serious diseases and also lists drugs that may be sold only on prescription. The maximum penalty for violation of the Act is three years in prison and a $5,000 fine.

The practical enforcement of the Food and Drugs Act requires that certain sections of the Act be supplemented by regulations interpreting the meaning of the Act. Consequently, there has grown up over the years a considerable volume of regulations which provide standards, set forth requirements for labelling and establish prohibitions or exemptions for certain substances or classes of substances within the scope of the Act.

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Thus, the Act and regulations provide a working document of specifications, which is used by the enforcement agency and which should be familiar to the trades and industries governed by them. Years of experience have established that there are very few occasions for which it does not provide adequate powers to protect the public interest in a satisfactory manner. On the other hand regulations are frequently changed. Numerous new foods and drugs are introduced to the market each year and new processing methods and packages must be considered, often requiring prompt amendments to existing standards or the establishment of new standards. Such changes can be made without much delay by Order in Council, which is a great advantage in the public interest.

Drugs

The Food and Drugs Act requires that drugs be manufactured under sanitary conditions. This requirement is applied to different classes of drugs in different ways. For example, it is to be expected that a drug made for injection into the human body should be made with somewhat greater precautions with respect to bacterial contamination than an ointment. The Act sets out in detail what is expected of biological products such as living vaccines for oral or parenteral use, parenteral antibiotics, sera, toxoids, insulin and corticotrophin.

None of this group of drugs may be made for sale in Canada unless licensed under the Food and Drugs Act and the regulations give, in detail, the requirements that must be met before a licence is granted. These include an inspection of the premises and facilities that are to be used in manufacture and an assessment of the qualifications and experience of the personnel in charge of their production. Furthermore, no new licenced product may be sold unless the first several lots are completely tested by the Department of National Health and Welfare in its laboratories. Afterwards 'spot checks' are made of the product to determine that safety and quality are being maintained.

Standards for all drugs are provided for in one or another of the following ways. (1) By regulation under the Act itself, in which case no other standard for that drug is permitted. Examples are thyroid tablets and digitalis preparations. (2) The standard is set forth in a pharmacopoeia or other standard work that is named in a schedule to the Food and Drugs Act. These compendia are the International Pharmacopoeia, the British Pharmacopoeia, the U.S. Pharmacopoeia, the French Codex, the Canadian Formulary, the British Pharmaceutical Codex and the National Formulary. (3) When a standard has not been provided for a drug in either (1) or (2) the manufacturer must set a standard of his own. This he does in fact when he labels the drug with a quantitative list of the active ingredients. In doing so he must not sell a drug that can be confused in any way with a drug which is standardized under (1) or (2).

Actually the greater number of newer drugs and products are included in the third group. The situation at present is that manufacturers find it more profitable to sell a product that is exclusively their own than to compete with one another for the market in official drugs (pharmacopoeial drugs) on a generic name basis. In all fairness, however, it should be pointed out that a manufacturer can properly believe that his pharmacopoeial drug is superior to that of a competitor, even though they are both made to meet the same official standard, and deserves to be advertised and marketed as an individual product.

Under Canada's free enterprise, capitalistic system of economy, no prohibitions prevent the drug manufacturer from adding, at will, to the number of products he offers for sale--provided they meet a known standard, are safe under conditions of use that will be employed and are properly labelled and advertised. As a result, there are estimated to be about 25,000 drug products offered for sale in Canada. This is in contrast to the limited numbers that are sold in some other countries where the government actually limits the number of brands of any one kind of product that may be sold.

This brings up for mention another important duty of the Food and Drug Directorate. No one may sell a *new* drug in Canada unless he first provides the Minister of National Health and Welfare with a description of the drug, a list of all ingredients, route of administration, dosage, a description of the pharmaceutical form, claims to be made, method of manufacture and control, the pharmacological properties, and results of clinical tests to demonstrate safety and effects. A *new* drug is not limited to new chemical substances; a product may be considered to be new because of its method of manufacture, its composition, its dosage and route of administration or because of the claims made for it. (When all factors are taken into account there were 180 *new* drugs for which manufacturers submitted the required information during 1959.)

The information submitted to the Minister is reviewed by a team of scientists and medical men in the Food and Drug Directorate. They carefully and critically review all data and information on which the manufacturer is basing his claim that he has an effective product that is safe when properly used. In addition, the manufacturers' processing methods and controls are carefully studied.

At the time a new drug is released for sale a decision has to be made as to whether it should be sold only on prescription. The Department is assisted in this action by the advice of a committee consisting of a representative of the Canadian Pharmaceutical Association and of the Canadian Medical Association together with the Director of Food and Drugs. In general, any drug that can be classed as a sedative, hypnotic or tranquillizer, goes automatically on the prescription list. This course has been followed because experience with these drugs indicates that they are frequently misused by the public. Amphetamine and its salts are also on the prescription list for the same reasons. In fact, misuse and abuse are main reasons for adding drugs to the list but other factors are considered: (*a*) the drug is new and has been shown experimentally to have undesirable side reactions; (*b*) the drug is designed exclusively for treatment of a serious disease for which self-medication is not advisable; (*c*) the drug is habit forming: and (*d*) injury from the drug is insidious and not easily recognized until far advanced. Members of the medical profession and pharmacists are advised of the prescription list so that there will be no misunderstanding on their part.

The Food and Drug Directorate also has a responsibility with respect to the quality of drugs. The qualities of drugs that are demanded by law may be listed as follows: (*a*) the drug must have the quantitative composition claimed for it in terms of active ingredients; (*b*) the medication must be contained in the pharmaceutical form in such a way that it is wholly available to the person taking it, and if special claims are made as to the rate or time of release of the medication they must be true claims; (*c*) the drug and excipient, vehicle or container in which it is held must be free from harmful extraneous substances; and (*d*) the drug must have the stability required of it. There are specific regulations covering each of these points and every year many hundreds of drugs are sampled and tested in the Food and Drug laboratories to ensure that they meet the quality requirements set forth.

The Food and Drugs Act is a part of criminal law and it lays down standards and other requirements that will minimize health hazards and fraud in the sale and use of these products. It outlines areas of responsibilities for the manufacturers and distributors but it does not guarantee that drugs will meet the quality standards expected of them. Violations of the law can be and are uncovered and remedial or punitive action taken. It is not, however, a proper function of the Food and Drug laboratories to act as a control laboratory for the pharmaceutical industry. The first responsibility for safety and potency is put squarely on the manufacturer. The ability, facilities and conscience of the manufacturer is the 'priceless' ingredient in a drug which the drug plant inspection program of the FDD attempts to measure. An experienced inspector will know a good deal about these aspects of quality in a plant after having examined procedures, records and facilities and talked to supervisory staff.

The Food and Drugs Act contains clauses and sections with respect to advertising. It is illegal to make false, exaggerated or misleading claims about a drug or to create an erroneous impression as to its composition, character, value, quantity, merit or safety. The work of enforcing this section is considerable, since the advertising of drugs is very extensive. Control of advertising is limited to that directed at the general public. Advertising to the medical or pharmaceutical professions is not interfered with although it is not excluded by the Act. It is assumed that members of these professions can take care of themselves because of their professional knowledge and experience. The public on the other hand has no such knowledge and is rather easily deceived by clever advertising copy. People are conditioned to expect anything from science and at the same time are very conscious of their health. They make a receptive audience for almost any claim that purports to be based on laboratory or clinical research.

Recent publicity linking certain dietary fats with high blood cholesterol and high cholesterol with aetherosclerosis has tempted some manufacturers of vegetable oils and their products to capitalize on the public interest in this controversy. These manufacturers have been warned that such advertising is illegal and it has been stopped temporarily, at least, in so far as advertising originating in Canada is concerned.

There is one basic difficulty in the fair and impartial enforcement of this requirement. The same prohibition does not exist in the United States, and American papers and periodicals are often read by Canadians while American TV and radio programs are available to most people in Canada. This example points up the need for international uniformity in food and drug legislation. The conflict between national laws extends beyond the field of advertising for both foods and drugs. Different standards and different labelling requirements among countries engaged in international trade present obstacles to that trade.

Some of the specific requirements in the Food and Drug regulations that apply to labels on drug packages are discussed here. The proper name (generic name, non-proprietary name) must be on the label but if there is no proper name, the common name. The proper name must be given immediately before or after the brand name and in type not less than one-half the size of the brand name. Thus the doctor is informed of the real name of the drug in the pharmaceutical form he is using. If it is a combination of drugs, the ingredients are to be listed by their proper names. There is a small committee of the World Health Organization that reviews non-proprietary names suggested for new drugs and makes recommendations for their use throughout the world.

The name and address of the manufacturer must also be on the label. It is very important for the physician to know who makes the drugs he uses since it is the ability and will of the manufacturer that counts and not the fact that he has a brand name for his product.

The regulations insist that lot numbers be given to all drugs intended for internal or parenteral use, which permits the tracing of a drug through the manufacturing processes and after distribution. It may be vital to know where a particular lot of a drug may be found if it is necessary to recall it promptly to prevent injury to users. Also, the labels of some reliable and potent drugs including several antibiotics and biological products carry an expiration date after which the drug is not recommended for use.

The Food and Drug Directorate administers another Act that is concerned with drugs. Drugs sold under the Proprietary or Patent Medicine Act are registered and their manufacturers are licensed. These medicines are household remedies and a complete list of ingredients is not carried on the label. Before registration is granted, the facts about the drug in respect to its composition and the claims to be made for it are carefully studied with the help of an advisory board consisting of two pharmacists and two physicians. All registrations are not reviewed by this board but only when there is doubt or when something new is proposed. There are many types of drugs that cannot be registered (narcotics, prescription drugs, new drugs, etc.) and the doses of other drugs are strictly limited in the interest of safety. Since provincial laws allow these registered medicines to be sold in stores other than pharmacies, review of a medicine for registration is made with the knowledge that it will be sold by those who have no professional qualifications and that it will be bought by the public for self-medication.

Vitamins

For administrative purposes vitamins stand between drugs and foods. They are natural components of many foods but at the same time several vitamins have been separated and purified or synthesized and are now dispensed in the usual pharmaceutical forms. They may be considered as either foods or drugs, depending on the claims made for them. Only the vitamins recognized as having established physiological or curative effects are listed in the regulations and the claims for these are limited by law.

In so far as vitamin-containing foods are concerned, the main problems are to discourage advertising claims that are not justifiable. Claims for their action are limited to those that have been well established by clinical studies. There are also foods to which vitamins are added either because they are normally low in vitamin content or because it is considered desirable for commercial reasons. If vitamins are to be added to foods it must be in reasonably large amounts, although an upper as well as a lower limit is set. It is understood that when claims are made for a vitamin in a food the vitamin is present in the amount stated or required by regulation.

Despite the restrictions that are put on the labelling and claims for vitamin products, there is an increasing number of foods appearing on the market with added vitamins in which the vitamins serve no purpose other than as a sales 'gimmick'. The only consolation in this situation is that people consuming these vitamins are suffering no harm to their health. In this connection a requirement of the vitamin regulations stipulates that products having more than a given level of vitamin content must be labelled "for therapeutic use only" and may not be advertised to the general public.

Foods

The Food and Drugs Act and regulations cover the foods sold in Canada from the standpoint of the prevention of health hazards and frauds. There are prohibitions on the sale of foods containing harmful or disgusting substances and against the manufacture, packaging and storage of food under unsanitary conditions. Food sold as meals in restaurants is not under the authority of the FDD, but is a provincial or municipal responsibility.

It is an offence to advertise, label or package a food in a manner that is false, misleading or deceptive or that is likely to create an erroneous impression about that food. Standards of composition or identity are set up for a number of foods and classes of foods. It is an offence to sell a food in such a way that it can be mistaken for a standardized food unless it does meet the standard in question. Requirements are laid down in the regulations for the labelling of all foods.

Consideration of the possible health hazards from foods brings to attention the two major sources of potential danger—bacterial contamination and the use of poisonous or harmful substances in or on foods for one reason or another. Another perhaps less obvious danger lies in the processing or preserving of foods in such a way that valuable (or even scarce) nutritional ingredients are lost. The Food and Drugs Act provides the authority to seize and destroy food that is found to be dangerously contaminated with bacteria or their toxins, to prosecute the manufacturer or vendor of such food and to inspect the manufacturing plants producing it.

The Food and Drug Directorate has been engaged for some time in inspection of food-processing plants with a view to forcing any manufacturers at fault to clean up their plants and produce clean wholesome foods. Warnings, advice, seizures and prosecutions are all used to improve the situation. Up to the present, it has not been a matter of applying bacteriological techniques to uncover the faults. The faults have been obvious to the eye and the first step in their elimination has been a vigorous use of broom and shovel and soap and water.

It is well known that dairy products such as cheese have been the source of typhoid epidemics and of tuberculosis. As a help in preventing such diseases, the Food and Drug regulations require that cheese either be stored for a minimum period of sixty days if it is not either pasteurized or made from pasteurized milk. There have been difficulties in stopping the sale of fresh cheese made from unpasteurized milk.

There are other problems in the health area connected with the manufacture of dairy products. Efforts of the Food and Drug Directorate, with the assistance of provincial departments, have succeeded in attaining a very marked improvement in the sanitation and housekeeping of factories but there remains the problem of unsatisfactory milk brought to these processing plants. Samples of individual farmer's milk have shown that a significant number are still supplying milk of a very low standard.

Changes in methods of marketing foods in the past fifteen years have led to an increase in the use and the number of chemical additives used in foods. The present world food supply does not appear to be adequate in amount for everyone and better ways of preserving, storing and transporting foods are needed; losses caused by insects and blight must be decreased; and 'convenience' foods are more in demand. All these factors require the use of chemical additives in the form of preservatives, antimicrobial agents, fungicides, insecticides, emulsifiers, colours, and other processing agents. While these are useful and even necessary, the safety of the foods to which they are added becomes a matter of great importance. This is the concern of the Food and Drug Directorate.

The principles on which the administrative policy is based are: (1) the use of the additive must contribute something of value to the consumer; (2) the amounts of the substance used must be well below the level at which even slight harmful effects can be observed; (3) there must be no deception or fraud as a result of the use of the substance; (4) there must be a quantitative method of determining the substance in the food; and (5) a maximum level (or tolerance) is established for the substance in or on foods which is well below the maximum safe level.

In order to put these criteria into effect, the manufacturer is required to submit all information about his product that will make possible sound decisions. This information is carefully reviewed by a team of scientists and medical men and when a tolerance is decided on the regulations are changed to permit the use of the substance in the manner proposed.

Another subject of importance is the bacteriology of frozen foods—particularly foods already cooked and requiring only warming before use. Surveys of these products have been made and a close watch is kept to prevent any seriously contaminated foods of this kind reaching the consumer. Storage temperatures during transport and at the retail level are important factors to be considered.

Much time is spent in 'policing' the market for fraudulent practices. Detection of fraud and collecting evidence that will stand up in court is a matter that requires sharpness and ingenuity of both inspectors and analysts. A typical example was the detection of the adulteration of olive oil with rapeseed oil. Because the standard for olive oil could not be specific enough to exclude some other vegetable oils, one manufacturer took advantage of the situation to add considerable quantities of rapeseed oil to his so-called pure olive oil. While standard tests aroused suspicion they were not adequate to produce legal evidence that would convict. Only when erucic acid was separated from the adulterated oil by molecular distillation was it possible to be sure. A rapid method was then developed by means of infrared spectroscopy to detect the differences between pure olive oil and adulterated olive oil. The adulteration of butter with vegetable oils has also been detected by means of the spectrophotometer and the presence of substances not found in pure butter. Many other problems are of a continuing nature, such as adulteration of meat products and failure of foods to meet the standards provided.

Cosmetics and Medical Devices

For a number of reasons the activities of the Food and Drug Directorate in the field of cosmetics are limited to assuring their safety. The advertising of cosmetics is not restricted in the same way as for foods and drugs. It is assumed that much 'puffery' is expected by the public for products intended to improve personal appearance and that they are not really deceived by it.

The basic ingredients of cosmetics have been established by long and extensive use to be safe. There are, of course, always the group of hypersensitive individuals who show allergic reactions to cosmetics. Other than in those individuals, the dangers from cosmetics appear to be in the use of hair dyes containing p-phenylene-diamine dyes. Strict warnings against contact of these preparations with the eyes are required on all labels together with instructions for carrying out patch tests. Colours used for lipsticks have received special attention but there is little likelihood and no evidence that, in the amounts these colours are ingested, they cause any harm.

Up to the present little intensive study has been made of medical devices. However, a study has been made of dental anaesthetic gas machines and some suggestions were made as to the precision and reliability of the gauges and valves used thereon. Fraudulent devices, such as the Oxydonor, recommended as a treatment for whatever ails you, have been investigated and successful prosecutions carried out in connection with their sale.

Organization

The Food and Drug Directorate consists of several divisions and has regional laboratories and district offices in various parts of Canada. The Inspection and Enforcement Services Division, the Administrative Division and the Scientific Services Division are at headquarters in Ottawa, together with a Medical Section and a Consumers Section.

The Scientific Services is a laboratory division composed of a number of sections covering a specific field of science—food chemistry, biophysics, pharmacology, physiology, pathology, microbiology, pharmaceutical chemistry and organic chemistry. Attached to the Associate Director's office is a Biometrics Section which gives statistical advice and help to all sections and divisions. The laboratory in Ottawa conducts mainly the research, investigation and development type of work and also the biological assays.

There are five regional offices and laboratories in Halifax, Montreal, Toronto, Winnipeg and Vancouver and twenty-one district offices throughout Canada. The regional laboratories are responsible for the examinations and analyses needed in daily enforcement tasks and for the inspectors at regional and district offices. Their work is co-ordinated at Ottawa.

Subsection 2.—Provincial and Local Health Services

Provincial and local health services may be grouped in several broad categories: general public health services, primarily of a preventive nature; services for specific diseases or disabilities combining prevention and treatment; services related to general medical and hospital care; and rehabilitation services for disabled persons.

General Public Health Services.—Provincial and local governments co-operate closely in providing community public health services. The autonomy of the provinces and their social, economic and geographic diversity make for some variety in legislative provisions, in financial arrangements, and in the detailed division of functions between provincial health departments and local and voluntary agencies. Each province, however, offers all or nearly all of a basic range of public health services which include environmental health, occupational health, communicable disease control, maternal and child health, dental health, nutrition, health education, and public health laboratories.

Environmental Health.—The control of factors in the physical environment which are harmful to physical health is a rapidly expanding area of public health activity. For many years, much of the essential work in this field was related to inspection duties long associated with community health sanitation, such as maintenance of pure milk, water and food supplies, supervision of plumbing and sewage disposal systems, and general sanitary conditions in public areas. Increasing industrialization, however, has imposed new responsibilities calling for new techniques in public health engineering and sanitary services. Air pollution, water pollution and radiation protection are emerging as major environmental health problems, necessitating co-ordinated effort by governments and other agencies in research and in planning effective control measures.

Occupational Health.—Services designed to prevent accidents and occupational diseases and to maintain the health of employees are the common concern of provincial health departments, labour departments, workmen's compensation boards, and industry management. Provincial agencies regulate working conditions and offer consultation and educational services to industry. All provinces have legislation (Factory Acts, Shop Acts, Mines Acts, Workmen's Compensation Acts) setting health safety standards for employment.

Communicable Disease Control.—There are separate divisions of epidemiology or communicable disease control in the six larger provinces; in the Atlantic Provinces these functions are handled by a provincial medical health officer. Local health authorities undertake case-finding and diagnostic services in co-operation with public health laboratories, carry out epidemiological investigations and often participate in tuberculosis and venereal disease control measures.

Maternal and Child Health.—Services for mothers and children are largely decentralized through local units and departments, but most provinces maintain separate divisions or employ consultants to promote better standards. Public health nurses have a prominent place in this work which may include prenatal education, provision for delivery and care of the newborn in remote areas, home visits, child health clinics and school health services.

Dental Health.—All provincial health departments have dental health divisions which administer programs, varying under local conditions, but directed almost entirely to health education and the care of children. Training of dentists and dental hygienists in public health, the operation of children's preventive and treatment clinics, and health education are being undertaken in all provinces. Water fluoridation projects, involving an over-all total of more than a million people are in operation in seven provinces.

Three provinces—Alberta, Manitoba and Nova Scotia—are setting up, in conjunction with their dental schools, special courses for dental hygienists.

In all ten provinces free clinical care is provided for children in remote rural areas by the use of mobile units. One province uses two railway-coach dental clinics to serve remote areas. A successful locally sponsored plan in which the cost of dental services for children is shared by the local community and the provincial health department is in operation in more than 70 communities in British Columbia; the sponsoring group decides whether registration for treatment may be free or on the payment of a nominal sum.

Nutrition.—Services include technical guidance, education, consultation and research. In some provinces, school lunch programs are also sponsored and dietary supplements distributed. Five provinces have special nutrition divisions; elsewhere, nutritionists serve in other divisions of the health department.

Health Education.—In most provinces experience has demonstrated the need for a professional full-time 'health educator' as a member of the public health team. Nine provinces have separate divisions or units to co-ordinate the dissemination of health information through all available media.

Public Health Laboratories.—The public health laboratory, an essential facility in the protection of community health and the control of infectious diseases, was one of the earliest provincial services developed to assist local public health departments. Work performed includes bacteriological examination of water, milk and food samples, the examination of specimens for diagnosis of communicable disease, and pathological special services. Each province maintains a central public health laboratory and most provinces have established additional branch laboratories. Recent trends in some provinces include efforts to co-ordinate public health and hospital laboratory services, special measures to bring laboratory facilities to rural areas, and devices to reduce the direct cost of clinical laboratory procedures to the individual.

Services for Specific Diseases or Disabilities.—Each province has developed special programs to deal with health problems of particular severity and prevalence, many of which are chronic or long-term in nature. The services and facilities provided are generally similar across the country.

Mental Health.—Major developments in provincial mental health programs have included the expanding and modernizing of mental hospitals, the training of various kinds of psychiatric personnel and the extension of community mental health services outside mental institutions. Assistance to patients in securing employment and in social adjustment following discharge from mental hospitals—a relatively new field of rehabilitation—is being promoted by voluntary groups and government agencies in several provinces.

With the exception of the municipally owned local institutions in Nova Scotia and hospitals in Quebec that operate under religious or lay auspices, most mental institutions are administered by provincial authorities. A great part of the cost is borne by the provincial governments, though a charge, according to ability to contribute, may be made for care in some provinces. Newfoundland and Saskatchewan provide complete free care; Manitoba assumes a minimum maintenance cost for all patients; in Nova Scotia the provincial hospital gives free care to patients requiring active treatment; and in Ontario and Prince Edward Island mental institution treatment is included in the hospital care insurance plan.

Most public mental institutions provide care and treatment for all types of mental illness; as facilities expand, it is becoming possible to segregate those under intensive treatment from those receiving long-term care. Some provinces maintain separate accommodation for certain categories of the mentally ill. For example, in British Columbia and Alberta, homes for the senile aged are an integral part of the mental institution system. Quebec has separate institutions for epileptics. Seven provinces operate schools for residential treatment and education of mentally defective persons and one of the three other provinces, New Brunswick, enacted legislation in 1958 authorizing the government to support the maintenance of mentally retarded children in approved homes. Increasing numbers of local day classes, usually sponsored by parent organizations, offer training opportunities for mentally deficient children in the community.

As the needs of patients are more fully understood and better methods of treatment develop, the daily routine of the mental patient is becoming less restrictive, as is shown by the increasing number of persons coming voluntarily for treatment. Custodial care and locked doors are giving way to open wards where patients may have unrestricted access to grounds, occupational and recreational areas.

One of the greatest changes in the past decade has been in the extension of community mental health services outside mental institutions. General hospitals have expanded their psychiatric services in both in-patient and out-patient departments. About 30 general hospitals have organized units where psychiatric treatment is provided by professional staffs. Out-patient clinics where mental illness may be treated at an early stage and guidance services given to children and parents also play an important part in the treatment of mental illness outside mental institutions. Fewer than 20 mental health clinics existed in 1948. Groups active in the subsequent large expansion include provincial health departments, municipalities or health units, mental institutions, general and allied special hospitals, school boards and voluntary organizations.

Day and night care centres, another departure from the traditional form of custodial care, developed first in Montreal a decade ago as part of the psychiatric service of two large general hospitals. Similar centres, admitting patients on a nine-to-five basis or in the evening after work, are now conducted at St. John's in Newfoundland, at Toronto and Cobourg in Ontario, and at Burnaby in British Columbia.

Cerebral Palsy.—Children suffering from cerebral palsy in most larger cities are able to attend out-patient and training centres, many of which have been organized by parent groups. A number of general and children's hospitals have also established assessment and treatment facilities for cerebral palsied children. In most communities, buses to transport children to day centres and hospital clinics are provided and operated by local service clubs or provincial crippled children societies. Attendance fees are usually nominal with financial support of the centres coming from local voluntary contributions, provincial governments and federal health grants. Training and employment programs for young adult cerebral palsied persons are also being developed in a few cities.

Tuberculosis.—Despite greatly reduced mortality from tuberculosis and evidence of some lowering in incidence, the number of cases discovered through provincial detection programs indicates that it is still a public health problem. Case-finding efforts are being focussed increasingly on selected groups particularly vulnerable through tuberculin tests as a means of detecting infected persons. The work of case-finding is supported substantially by voluntary campaigns conducted by the Canadian Tuberculosis Association.

Sanatoria treatment is free in Newfoundland, Nova Scotia, New Brunswick, Manitoba, Saskatchewan and Alberta, and in Ontario is included in the hospital insurance benefits which came into effect in January 1959. Even in those provinces where a charge for sanatoria care may be made, the amount collected from paying patients is a very small percentage of total costs.

The number of beds set up in sanatoria and in tuberculosis units of general hospitals declined from a peak of 18,977 in 1953 to 13,538 in 1959. This decline in bed use has resulted from such factors as a decrease in the number of admissions, detection of cases in earlier stages of the disease, and improved treatment methods by drugs and surgery. Provision has been made in several provinces to furnish drugs for home treatment. Facilities for the vocational rehabilitation of discharged patients have been developed in all provinces, and increasing numbers are being re-established in suitable employment.

Cancer.—Health departments and lay and professional groups working for the control of cancer have been concerned mainly with four aspects of the problem—diagnosis, treatment, research and public education. In the detection and treatment of cancer, specialized medicine, hospital services and an expanding public health program are closely related. There are programs operating under health departments in four provinces; an equal number have provincially supported cancer agencies or commissions. These sponsor the work of diagnosis and treatment in special clinics located usually within the larger general hospitals. Under the provincial hospital insurance plans, the benefits pertaining to in-patient care in the treatment of cancer are essentially similar in ten provinces and include such special services as diagnostic radiology, laboratory tests and radiotherapy. In at least five provinces these benefits also apply to out-patients. In others, the previous pattern of services to out-patients—that of assessing costs of treatment in relation to ability to pay—is still in effect. Comprehensive free medical programs for cancer patients, which have long operated in Saskatchewan and Alberta, continue unchanged.

Poliomyelitis.—Through agreements with the Federal Government, all provincial health departments have made Salk vaccine available for free inoculation of children and are encouraging older age groups to avail themselves of the protection of this vaccine. During 1959, the incidence of paralytic poliomyelitis rose in all provinces to its highest level since vaccination began, while the national total was the second largest in the previous ten years. By far the greatest proportion of cases occurred among unvaccinated persons. Very few who had received the prescribed number of inoculations contracted the disease.

Previously existing programs offering free standard ward hospital care to poliomyelitis patients have now become incorporated in the federal-provincial hospital insurance schemes. In the provision of restorative services through remedial surgery, physiotherapy and hydrotherapy and the aid of prosthetic appliances, both provincial departments of health and voluntary societies have a part. Post-poliomyelitic patients may receive vocational training under provincial rehabilitation schemes; boards of education operate special classes for physically handicapped children.

Venereal Disease.—Free diagnostic and treatment services are available in all provinces but the operation of government clinics is being increasingly superseded by the method of supplying free drugs to private physicians who are reimbursed for treatment of indigents on a fee-for-service basis.

Alcoholism.—Ontario, Manitoba, Alberta and British Columbia carry out research and education programs and operate centres for treatment, supported largely by public funds. Ontario, Saskatchewan and Alberta also have rehabilitation programs for alcoholic inmates of reform institutions. Recent legislation in Newfoundland and Nova Scotia authorizes the setting up of similar agencies to initiate research and education studies.

Other Diseases or Disabilities.—Services for a number of chronic disabilities, such as heart disease, arthritis, diabetes, visual and auditory impairments and paraplegia, have been developed largely by voluntary agencies, assisted by federal and provincial funds. A brief description of the programs of some of these agencies is given in Part III, which deals with national voluntary health and welfare activities.

Public Medical Care.—Public medical care programs for the general population exist in three provinces but are limited to residents of particular areas. Approximately one-half of Newfoundland's population receive physician's services at home or in hospital under the provincially administered Cottage Hospital Plan which is financed in part on a premium basis. Medical indigents not under the Plan may also receive care at provincial expense. In addition, all Newfoundland children under the age of 16 years are entitled to free medical and surgical care in hospital. In Manitoba and Saskatchewan, locally operated municipal-doctor programs cover about 30,000 and 167,000 persons, respectively. The Swift Current Health Region in Saskatchewan operates a comprehensive prepaid medical-dental care scheme for about 50,000 persons. These latter programs are subsidized to some extent by provincial health departments.

For some years, the Provinces of Nova Scotia, Ontario, Saskatchewan, Alberta and British Columbia have provided health service programs for regular social assistance recipients—persons in receipt of means-tested old age security supplements, old age assistance, blindness and disability allowances, mothers' allowances and, in some provinces, certain child welfare cases. However, Nova Scotia covers only mothers' allowance recipients and their dependants and blindness allowance recipients and, in Saskatchewan, old age assistance recipients are the responsibility of the municipality of residence.

Under the Ontario program, the major medical services offered are physician's care in the home and office, including certain minor surgical procedures and prenatal and postnatal care. Since Jan. 1, 1959, basic dental care has been available to the children of mothers' allowance recipients. In addition to these medical services, Nova Scotia provides major and minor surgical and obstetrical services and medical attendance in hospital. The programs in Saskatchewan, Alberta and British Columbia give complete medical care in the home, office and hospital, including surgical and obstetrical services, specified prescription drugs (except in Alberta, and with a dollar limitation in Saskatchewan) and dental and optical care, sometimes only on authorization and/or with dollar limits. All of these plans are completely provincially financed, except in British Columbia where costs are shared on a 90-10 basis with the municipalities assuming their share on a proportionate population basis, and in Ontario where per capita contributions toward the cost of medical services for the assistance group are shared on an 80-20 basis with the municipality of residence. In 1960, Manitoba broadened its program of provincial social assistance to include a comprehensive program of health care for cases of need among the aged and infirm including those in nursing homes or institutions, the blind and the physically or mentally disabled, mothers with custody of dependent children, and neglected children. Services provided include medical, surgical, optical and dental care, essential drugs, remedial care and treatment including physiotherapy, emergency transportation, and chiropractic treatment.

Indigent persons not covered by these programs, as well as indigents in other provinces, may receive necessary care from the municipalities of residence. In general, where costs are assumed by the municipality, there is some form of cost-sharing arrangement with the provincial government.

Rehabilitation Services.—Expansion of rehabilitation services in all provinces indicates growing success in prevention and control of many disabling conditions and broader understanding of the needs of handicapped persons. Following the earlier rehabilitation programs organized for injured workers, disabled war veterans and such groups as the blind and the tuberculous, there has been continued progress in the development of services for other disability groups and special medical, vocational, educational and social services for the handicapped. More emphasis is being given to extending comprehensive services to all handicapped regardless of disability, and to strengthening national, provincial and community bodies concerned with planning and co-ordination. The broadening scope of rehabilitation programs and the movement toward integration of the numerous specialized services are exemplified by the liaison developed between two of the large national voluntary agencies, the Canadian Council for Crippled Children and Adults, and the Canadian Foundation for Poliomyelitis and Rehabilitation, as well as by the steady growth of the official provincial rehabilitation programs and the development of co-ordinated community services for the handicapped. Concurrently there has been more attention given to improving treatment and social services for mentally ill persons, mentally retarded children, alcoholics, cerebral palsied children and other disability groups.

Rehabilitation services for persons handicapped by physical or mental defects are organized under voluntary and public auspices as part of general health, welfare or education programs, and also by specialized agencies that provide one or more rehabilitation services. In many of the larger cities, these facilities include hospital physical medicine and rehabilitation departments and special clinics for particular disabilities, separate rehabilitation centres, sheltered workshops, vocational counselling, training and job-placement agencies, and special classes, schools and other combined treatment and education centres for handicapped children. Home care services, such as nursing, physical and occupational therapy and housekeeping services, employment of the homebound and recreational services have been started by a few agencies but their coverage is generally limited.

The main elements of the nation-wide rehabilitation program, introduced in 1953, are supported by joint federal-provincial programs for the co-ordination of rehabilitation services, the vocational training of disabled persons, and the National Health Grants designated for the extension of medical rehabilitation and crippled children's services and for the rehabilitation of the mentally ill or deficient, the tuberculous and other chronically ill. Vocational assessment and counselling of the handicapped is provided by rehabilitation officers attached to the provincial rehabilitation services and by some of the other rehabilitation agencies and centres. Medical rehabilitation services are made available through the provincial public assistance medical care schemes, hospital insurance plans, public health services, the voluntary agencies and various health grant projects. The main responsibility for job placement of persons with occupational handicaps is carried by about 165 special placement officers located in the larger National Employment Service offices across the country, although some rehabilitation agencies also do placement work, especially of the severely handicapped. The Federal Government also provides direct services through the programs administered by the Department of Veterans Affairs which operates special centres for the treatment of chronically ill and aging veterans, by the Department of Citizenship and Immigration for physically and socially handicapped Indians, and by the Department of Northern Affairs and National Resources for the resettlement of disabled Eskimos.

In the year ended Mar. 31, 1960, federal-provincial expenditures, shared under the Co-ordination of Rehabilitation of Disabled Persons Agreements administered by the Department of Labour, increased to $228,268. The cost of support of 1,462 disabled persons reported as rehabilitated was $923,240 during the year prior to acceptance as compared with estimated annual earnings of $2,683,403 after placement in jobs. The total vocational training expenditures under the Special Vocational Training Projects Agreements, also a matching grant administered by the Department of Labour, increased to $566,573 for the training of 1,344 disabled persons enrolled in a wide range of vocational courses. Special placements of handicapped persons who required assistance in finding work during 1959 numbered 17,940, which was 20 p.c. more than during 1958.

Expenditures on projects under the Medical Rehabilitation Grant and Crippled Children Grant (a portion of these funds being on a matching basis) amounted to $1,176,968 of the $1,520,000 available from federal funds in the year ended Mar. 31, 1960. Through the 75 projects approved under these grants, equipment was provided for 16 hospitals and rehabilitation centres, and support was given for the extension of services by 13 rehabilitation centres, 10 hospital centres and clinics, 17 cerebral palsy training centres, five crippled children's services, and by seven of the provincial programs. Other projects supported the full-time professional training of 31 rehabilitation personnel with additional bursaries for short courses, and also the operation of four schools of physical, occupational and speech therapy.

Subsection 3.—Health Services in the Yukon and Northwest Territories

Health services in the two Territories are operated under conditions considerably different from those in the provinces. Extensive sparsely settled areas, climatic conditions, lack of local government and direct federal administration constitute a basic set of conditions under which health services for both native and white populations, outside the few settled areas, are provided by government agencies or religious organizations. The Yukon Territorial Government, the Northwest Territories Council, the Directorate of Indian and Northern Health Services of the Department of National Health and Welfare, the Department of Northern Affairs and National Resources and the Department of National Defence are all concerned with the provision of services.

Complete health services are supplied to Indians and Eskimos by Indian and Northern Health Services. Particular emphasis is given to tuberculosis, and mass X-ray programs are carried out annually. The Eastern Arctic is served by the annual Eastern Arctic Patrol as well as by medical health officers. In the Western Arctic, medical officers and nursing stations are located at strategic points and a travelling dentist is employed. Persons who cannot be cared for locally are transferred to federal hospitals in the provinces.

Hospital insurance plans in both the Yukon and Northwest Territories came into operation in 1960. In the Yukon Territory, services for the white population are administered through the Commissioner for the Yukon and include complete treatment for tuberculosis and poliomyelitis patients. Public health services include communicable disease control, public health nursing, sanitary inspection and tuberculosis case-finding.

In the Northwest Territories, health programs for the white population include treatment for tuberculosis and venereal disease as well as dental care for children under 17 years of age and hospital care for the mentally ill. Cancer diagnosis is provided through the Edmonton Clinic. Indigent residents are eligible for medical, dental and optical services as well as for general hospital care.

Section 2.—Health Statistics

Statistical information on the health of Canadians is at present limited to the well established and highly standardized mortality, communicable disease and institutional statistic series, all of which have been available for a long period. As compared with these records, other national health statistics are still in an early stage of development. So far, the only source of information on general illness, health services and personal expenditure for health care is the Canadian Sickness Survey of 1950-51. Other projects deal with specific health problems or selected groups of the population, such as Civil Service illness and the activities of the Victorian Order of Nurses. Much statistical information is also available from provincial and other health sources.

Statistics on causes of death are given in the Chapter on Vital Statistics, pp. 217-220; those on hospital statistics in Subsection 1 following; and those on notifiable diseases and illness in the Civil Service in Subsection 2. A brief outline of the scope and methods of the Sickness Survey of 1950-51 is given in the 1955 Year Book and some of the results are published in the 1955, 1956 and 1957-58 editions. Details are available in bulletin form (Catalogue Nos. 82-501 to 82-511).

Subsection 1.—Hospital Statistics*

There were 1,503 hospitals operating in Canada in 1959; their rated capacity (not including bassinets for the newborn) was 192,948 beds and cribs. One year earlier, 101 fewer institutions were operating as hospitals throughout the country, and there were 9,543 fewer beds and cribs available for patients.

Two methods of hospital classification are used in the tables of this Subsection: one based on admission policy, i.e., public, private or federal; and the other based on type of service provided, i.e., general, special, mental or tuberculosis. Both classifications are combined in Tables 1 and 2, which show the number of hospitals of each type and their bed capacities, distributed provincially. In 1959 almost two of every three institutions recognized by provincial authorities as hospitals were 'general' hospitals—hospitals either devoted primarily to the active treatment of a wide range of illnesses or having an active treatment unit. They accounted for at least two of every three hospitals in each province except Quebec (where the ratio was somewhat less than one in two) and British Columbia (where the ratio was about three in five). As might be expected, the ranking of the provinces according to population corresponds closely with their order in number of hospital beds, but not with their rank in number of hospitals. Saskatchewan has many small hospitals and, in 1959, ranked next after Ontario and Quebec in number of general hospitals available to the public. Bed capacity of public hospitals per 10,000 population was highest in Prince Edward Island, Quebec, the Prairie Provinces and the Territories (all over 100.0). Except for Newfoundland's 74.5, capacity per 10,000 population ranged between 87.2 and 94.5 in the other provinces.

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* Prepared in the Institutions Section of the Health and Welfare Division, Dominion Bureau of Statistics. Detailed information will be found in the following DBS publications: *Hospital Statistics, Vols. I and II* (Catalogue Nos. 83-202 and 83-203); *Mental Health Statistics* (Catalogue No. 83-204) and *Financial Supplement* (No. 83-205); *Tuberculosis Statistics* (No. 83-206) and *Financial Supplement* (No. 83-207).

2.—Hospitals (Public, Private and Federal) Operating in Canada, by Province, 1959

Province or Territory and Category of Hospital	General	Mental[1]	Tuberculosis[2]	Other	Total
	No.	No.	No.	No.	No.
Newfoundland—					
Public	44	1	2	3	50
Private	—	—	—	—	—
Federal	1	—	—	—	1
Prince Edward Island—					
Public	8	2	1	1	12
Private	—	—	—	—	—
Federal	—	—	—	—	—
Nova Scotia—					
Public	44	10	3	5	62
Private	2	—	—	—	2
Federal	5	—	—	1	6
New Brunswick—					
Public	33	2	5	4	44
Private	—	—	—	—	—
Federal	3	—	—	2	5
Quebec—					
Public	116	14	14	58	202
Private	48	—	—	112	160
Federal	4	1	—	2	7
Ontario—					
Public	183	18	15	24	240
Private	24	4	—	64	92
Federal	16	1	—	1	18
Manitoba—					
Public	73	4	3	1	81
Private	6	—	—	2	8
Federal	9	—	2	—	11
Saskatchewan—					
Public	152	3	3	3	161
Private	—	—	—	4	4
Federal	6	—	—	1	7
Alberta—					
Public	101	7	2	11	121
Private	2	—	—	4	6
Federal	8	—	—	1	9
British Columbia—					
Public	94	8	2	2	106
Private	8	1	—	55	64
Federal	3	—	3	2	8
Yukon and Northwest Territories—					
Public	13	—	—	—	13
Private	2	—	—	—	2
Federal	1	—	—	—	1
Canada—					
Public	**861**	**69**	**50**	**112**	**1,092**
Private	**92**	**5**	**—**	**241**	**338**
Federal	**56**	**2**	**5**	**10**	**73**

[1] Mental hospitals only; does not include psychiatric or mental units in general hospitals. [2] Tuberculos
hospitals only; does not include tuberculosis units in general hospitals.

3.—Bed Capacity of Hospitals (Public, Private and Federal) Operating in Canada, by Province, as at Dec. 31, 1959

(Excluding bassinets)

Province or Territory and Category of Hospital	General		Mental		Tuberculosis		Other		Totals	
	Beds	Per 10,000 Population[1]	Beds	Per 10,000 Population[1]	Beds	Per 10,000 Population[1]	Beds	Per 10,000 Population[1]	Beds	Per 10,000 Population[1]
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland—										
Public	1,868	41.6	835	18.6	550	12.2	92	2.0	3,345	74.5
Private	—	—	—	—	—	—	—	—	—	—
Federal	43	1.0	—	—	—	—	—	—	43	1.0
Prince Edward Island—										
Public	659	64.6	528	51.8	110	10.8	31	3.0	1,328	130.2
Private	—	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—	—
Nova Scotia—										
Public	3,367	47.0	2,713	37.9	515	7.2	172	2.4	6,767	94.5
Private	16	0.2	—	—	—	—	—	—	16	0.2
Federal	750	10.5	—	—	—	—	7	0.1	757	10.6
New Brunswick—										
Public	2,852	48.3	1,331	22.6	761	12.9	201	3.4	5,145	87.2
Private	—	—	—	—	—	—	—	—	—	—
Federal	587	9.9	—	—	—	—	19	0.3	606	10.3
Quebec—										
Public	22,365	44.7	17,815	35.6	3,464	6.9	8,701	17.4	52,345	104.9
Private	811	1.6	—	—	—	—	1,906	3.8	2,717	5.4
Federal	2,690	5.4	513	1.0	—	—	31	0.1	3,234	6.5
Ontario—										
Public	27,652	46.5	18,993	31.9	3,400	5.7	3,915	6.6	53,960	90.7
Private	751	1.3	333	0.6	—	—	1,309	2.2	2,393	4.0
Federal	3,781	6.4	841	1.4	—	—	150	0.3	4,772	8.0
Manitoba—										
Public	4,403	49.8	3,405	38.5	608	6.9	503	5.7	8,919	100.8
Private	56	0.6	—	—	—	—	56	0.6	112	1.3
Federal	1,099	12.4	—	—	365	4.1	—	—	1,464	16.5
Saskatchewan—										
Public	5,998	66.5	3,190	35.4	662	7.3	515	5.7	10,365	114.9
Private	—	—	—	—	—	—	14	0.2	14	0.2
Federal	170	1.9	—	—	—	—	60	0.7	230	2.5
Alberta—										
Public	7,532	60.6	4,503	36.2	600	4.8	716	5.8	13,351	107.4
Private	75	0.6	—	—	—	—	56	0.5	131	1.1
Federal	1,245	10.0	—	—	—	—	70	0.6	1,315	10.6
British Columbia—										
Public	8,234	52.4	5,709	36.4	417	2.7	157	1.0	14,517	92.5
Private	222	1.4	73	0.5	—	—	1,811	11.5	2,106	13.4
Federal	1,437	9.2	—	—	558	3.6	259	1.6	2,254	14.4
Yukon and Northwest Territories—										
Public	619	182.1	—	—	—	—	—	—	619	182.1
Private	21	6.2	—	—	—	—	—	—	21	6.2
Federal	102	30.0	—	—	—	—	—	—	102	30.0
Canada—										
Public	**85,549**	**49.0**	**59,022**	**33.8**	**11,087**	**6.4**	**15,003**	**8.6**	**170,661**	**97.8**
Private	**1,952**	**1.1**	**406**	**0.2**	**—**	**—**	**5,152**	**3.0**	**7,510**	**4.3**
Federal	**11,904**	**6.8**	**1,354**	**0.8**	**923**	**0.5**	**596**	**0.3**	**14,777**	**8.5**

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[1] Based on estimated population as at June 1, 1959, given at p. 165.

Although 1959 information on numbers of hospitals operating in Canada and their bed capacities was available at the time of going to press, details for that year regarding movement of patients, patient-days, hospital facilities, personnel and finances had not yet been compiled. Only Table 4 showing movement of patients and patient-days for the period 1954-58, and Table 5 showing 1958 revenues and expenditures of reporting public hospitals in the different provinces, as given in the 1960 Year Book, are repeated here; 1959 figures when available will appear in bulletin form (see footnote, p. 255).

Table 4 shows the changing pattern of hospital utilization over the 1954-58 period. The absolute number of admissions increased by 23.6 p.c. but the ratio per 100,000 population increased by 10.8 p.c. Year-by-year gains, however, proceeded at a declining rate during the five-year period because of downward trends in numbers of admissions to tuberculosis sanatoria, maternity hospitals and "other" hospitals (special hospitals not specified as to type of service). Concurrently with the 23.6 p.c. rise in admissions, patient-days increased by only 10.9 p.c., indicating a shorter average length of stay per patient in 1958 than in 1954. The number of patients in hospital at year-end per 100,000 population remained remarkably constant over the period—938 on Dec. 31, 1954 and 932 on Dec. 31, 1958. Despite the over-all ratio (in rated-capacity terms) of 16 general hospital beds to every 10 beds in mental institutions, there was a difference of less than 10 p.c. between the number of patients in reporting general hospitals (70,649) and the number in mental institutions (64,188) on Dec. 31, 1958.

4.—Movement of Patients and Patient-Days of Reporting Public, Private and Federal Hospitals, by Type, 1954-58

Type of Service and Item		1954	1955	1956	1957	1958
		PUBLIC HOSPITALS				
General—						
Hospitals reporting	No.	762	781	796	820	833
Ratio of reporting to operating hospitals	p.c.	96.0	96.7	97.0	98.4	98.2
Admissions[1]	No.	2,205,335	2,394,777	2,548,389	2,675,400	2,764,214
Per 100,000 population	"	14,426	15,255	15,847	16,128	16,214
Discharges and deaths	"	2,204,207	2,392,900	2,547,715	2,673,034	2,760,932
Patients in hospital at Dec. 31	"	50,185	54,181	55,836	58,359	62,561
Per 100,000 population	"	328	345	347	352	367
Patient-days	"	21,198,597	22,728,944	24,113,477	24,910,797	25,752,916
Chronic and Convalescent—						
Hospitals reporting	No.	34	46	46	51	63
Ratio of reporting to operating hospitals	p.c.	75.6	88.5	86.8	85.0	82.9
Admissions[1]	No.	8,051	10,821	10,323	10,297	10,941
Per 100,000 population	"	53	69	64	62	64
Discharges and deaths	"	7,900	10,577	9,748	9,980	10,902
Patients in hospital at Dec. 31	"	6,500	6,939	7,402	7,898	9,131
Per 100,000 population	"	43	44	46	48	54
Maternity—						
Hospitals reporting	No.	13	17	17	12	11
Ratio of reporting to operating hospitals	p.c.	86.7	94.4	94.4	92.3	78.6
Admissions[1]	No.	30,528	28,936	24,715	25,695	24,114
Per 100,000 population	"	200	184	154	155	141
Discharges and deaths	"	30,507	29,052	24,681	25,716	24,118
Patients in hospital at Dec. 31	"	747	647	460	443	432
Per 100,000 population	"	5	4	3	3	3
Mental—[2]						
Hospitals reporting	No.	73	70	71	72	7
Ratio of reporting to operating hospitals	p.c.	100.0	100.0	100.0	100.0	100.0
Admissions[1]	No.	20,734	23,374	23,601	26,133	27,23
Per 100,000 population	"	136	149	147	158	16
Discharges and deaths	"	18,778	21,236	22,089	24,821	26,17
Patients in hospital at Dec. 31	"	59,985	61,264	62,590	63,318	63,86
Per 100,000 population	"	392	390	389	382	37
Patient-days	"	22,205,028	22,824,487	23,269,402	3,393,648	23,942,56

For footnotes, see end of table, p. 261.

4.—Movement of Patients and Patient-Days of Reporting Public, Private and Federal Hospitals, by Type, 1954-58—continued

Type of Service and Item	1954	1955	1956	1957	1958
	PUBLIC HOSPITALS—concluded				
Tuberculosis—[3]					
Hospitals reporting........No.	56	55	55	54	51
Ratio of reporting to operating hospitals..p.c.	94.9	100.0	100.0	100.0	100.0
Admissions[1]........No.	13,256	13,445	14,075	15,075	13,352
Per 100,000 population........ "	87	86	88	91	78
Discharges and deaths........ "	16,046	16,565	16,855	18,160	15,674
Patients in hospital at Dec. 31........ "	12,122	11,432	10,928	9,657	8,371
Per 100,000 population........ "	79	73	68	58	49
Patient-days........ "	4,572,425	4,398,047	4,240,546	3,887,198	3,413,428
Totals, Public Hospitals—[4]					
Hospitals reporting........No.	946	983	998	1,020	1,044
Ratio of reporting to operating hospitals..p.c.	94.4	96.3	96.4	97.5	96.8
Admissions[1]........No.	2,286,027	2,485,538	2,632,765	2,762,224	2,851,715
Per 100,000 population........ "	14,954	15,833	16,372	16,651	16,728
Discharges and deaths........ "	2,285,770	2,484,531	2,632,678	2,761,387	2,849,461
Patients in hospital at Dec. 31........ "	130,552	135,813	138,211	140,564	145,864
Per 100,000 population........ "	854	865	859	847	856
Patient-days........ "	51,055,886	53,269,979	54,838,641	55,621,190	57,179,935
	PRIVATE HOSPITALS				
General—					
Hospitals reporting........No.	62	55	65	63	55
Ratio of reporting to operating hospitals..p.c.	--	60.4	81.3	80.8	73.3
Admissions[1]........No.	33,947	37,071	48,137	47,747	53,139
Per 100,000 population........ "	222	236	299	288	312
Discharges and deaths........ "	30,553	38,081	47,980	47,665	52,935
Patients in hospital at Dec. 31........ "	545	529	878	917	895
Per 100,000 population........ "	4	3	5	6	5
Patient-days........ "	232,658	233,709	366,395	378,235	342,934
Mental—[2]					
Hospitals reporting........No.	2	4	4	5	5
Ratio of reporting to operating hospitals..p.c.	100.0	80.8	80.0	71.4	62.5
Admissions[1]........No.	2,671	1,962	1,955	2,118	2,601
Per 100,000 population........ "	17	12	12	13	15
Discharges and deaths........ "	2,657	1,965	1,967	2,065	2,609
Patients in hospital at Dec. 31........ "	462	392	386	427	327
Per 100,000 population........ "	3	2	2	3	2
Patient-days........ "	105,120	145,599	146,078	150,013	121,930
Tuberculosis—[3]					
Hospitals reporting........No.	1	1	1	—	—
Ratio of reporting to operating hospitals..p.c.	100.0	100.0	100.0	—	—
Admission[1]........No.	—	1	1	—	—
Per 100,000 population........ "	—	--	--	—	—
Discharges and deaths........ "	—	1	2	—	—
Patients in hospital at Dec. 31........ "	1	1	—	—	—
Per 100,000 population........ "	--	--	—	—	—
Patient-days........ "	365	365	34	—	—
Totals, Private Hospitals—[4]					
Hospitals reporting........No.	172	180	209	237	210
Ratio of reporting to operating hospitals..p.c.	64.7	63.2	77.1	78.7	77.5
Admissions[1]........No.	63,161	65,490	74,510	75,210	78,365
Per 100,000 population........ "	413	417	463	453	460
Discharges and deaths........ "	62,986	65,379	74,221	74,927	77,959
Patients in hospital at Dec. 31........ "	3,102	3,076	3,769	4,361	4,493
Per 100,000 population........ "	20	20	23	26	26
Patient-days........ "	1,101,582	1,160,862	1,447,915	1,635,949	1,640,880

For footnotes, see end of table, p. 261.

4.—Movement of Patients and Patient-Days of Reporting Public, Private and Federal Hospitals, by Type, 1954-58—continued

Type of Service and Item	1954	1955	1956	1957	1958
	FEDERAL HOSPITALS				
General—					
Hospitals reporting No.	39	36	35	35	33
Ratio of reporting to operating hospitals p.c.	100.0	100.0	100.0	100.0	100.0
Admissions[1] No.	73,598	75,506	73,342	74,327	74,766
Per 100,000 population “	481	481	456	448	439
Discharges and deaths “	73,501	75,775	73,564	74,486	74,962
Patients in hospital at Dec. 31 “	7,837	7,579	7,563	7,405	7,193
Per 100,000 population “	51	48	47	45	42
Patient-days “	3,233,720	3,196,335	3,137,461	3,098,808	2,986,536
Tuberculosis—[3]					
Hospitals reporting No.	7	7	6	6	5
Ratio of reporting to operating hospitals p.c.	100.0	100.0	100.0	100.0	100.0
Admissions[1] No.	977	789	780	750	694
Per 100,000 population “	6	5	5	5	4
Discharges and deaths “	1,168	1,100	970	1,006	950
Patients in hospital at Dec. 31 “	1,064	894	834	776	696
Per 100,000 population “	7	6	5	5	4
Patient-days “	399,077	350,083	339,316	319,636	297,798
Totals, Federal Hospitals—[4]					
Hospitals reporting No.	53	55	52	49	47
Ratio of reporting to operating hospitals p.c.	100.0	100.0	100.0	100.0	100.0
Admissions[1] No.	83,512	84,618	82,562	77,665	76,205
Per 100,000 population “	546	539	513	468	447
Discharges and deaths “	83,475	85,208	82,829	77,927	76,488
Patients in hospital at Dec. 31 “	9,791	9,161	9,132	8,713	8,477
Per 100,000 population “	64	58	57	53	50
Patient-days “	3,979,441	3,866,729	3,756,126	3,597,154	3,503,386
	ALL HOSPITALS[4]				
General—					
Hospitals reporting No.	863	872	896	918	921
Ratio of reporting to operating hospitals p.c.	--	93.3	95.7	97.0	96.3
Admissions[1] No.	2,312,880	2,507,354	2,669,868	2,797,474	2,892,119
Per 100,000 population “	15,130	15,972	16,603	16,863	16,965
Discharges and deaths “	2,308,261	2,506,756	2,669,259	2,795,185	2,888,829
Patients in hospital at Dec. 31 “	58,567	62,289	64,277	66,681	70,649
Per 100,000 population “	383	397	400	402	414
Patient-days “	24,664,975	26,158,988	27,617,333	28,387,840	29,082,386
Chronic and Convalescent—					
Hospitals reporting No.	34	46	46	51	63
Ratio of reporting to operating hospitals p.c.	75.6	88.5	86.8	85.0	82.9
Admissions[1] No.	8,051	10,821	10,323	10,297	10,941
Per 100,000 population “	53	69	64	62	64
Discharges and deaths “	7,900	10,577	9,748	9,980	10,902
Patients in hospital at Dec. 31 “	6,500	6,939	7,402	7,898	9,131
Per 100,000 population “	43	44	46	48	54
Maternity—					
Hospitals reporting No.	13	17	17	12	11
Ratio of reporting to operating hospitals p.c.	86.7	94.4	94.4	92.3	78.6
Admissions[1] No.	30,528	28,936	24,715	25,695	24,114
Per 100,000 population “	200	184	154	155	141
Discharges and deaths “	30,507	29,052	24,681	25,716	24,118
Patients in hospital at Dec. 31 “	747	647	460	443	432
Per 100,000 population “	5	4	3	3	3

For footnotes, see end of table, p. 261.

4.—Movement of Patients and Patient-Days of Reporting Public, Private and Federal Hospitals, by Type, 1954-58—concluded

Type of Service and Item		1954	1955	1956	1957	1958
		ALL HOSPITALS[4]—concluded				
Mental—[2]						
Hospitals reporting	No.	75	74	75	77	76
Ratio of reporting to operating hospitals	p.c.	100.0	98.7	98.7	97.5	96.2
Admissions[1]	No.	23,405	25,336	25,556	28,251	29,839
Per 100,000 population	"	153	161	159	170	175
Discharges and deaths	"	21,435	23,201	24,056	26,886	28,781
Patients in hospital at Dec. 31	"	60,447	61,656	62,976	63,745	64,188
Per 100,000 population	"	395	393	392	384	377
Patient-days	"	22,310,148	22,970,086	23,415,480	23,543,661	24,064,492
Tuberculosis—[3]						
Hospitals reporting	No.	64	63	62	60	56
Ratio of reporting to operating hospitals	p.c.	95.5	100.0	100.0	100.0	100.0
Admissions[1]	No.	14,233	14,235	14,856	15,825	14,046
Per 100,000 population	"	93	91	92	95	82
Discharges and deaths	"	17,214	17,666	17,827	19,166	16,624
Patients in hospital at Dec. 31	"	13,187	12,327	11,762	10,433	9,067
Per 100,000 population	"	86	79	73	63	53
Patient-days	"	4,971,867	4,748,495	4,579,896	4,206,834	3,711,226
Totals, All Hospitals—[4]						
Hospitals reporting	**No.**	**1,171**	**1,218**	**1,259**	**1,306**	**1,301**
Ratio of reporting to operating hospitals	**p.c.**	**88.6**	**89.5**	**92.6**	**93.5**	**93.1**
Admissions[1]	**No.**	**2,432,700**	**2,635,646**	**2,789,837**	**2,915,099**	**3,006,285**
Per 100,000 population	"	**15,913**	**16,790**	**17,349**	**17,572**	**17,634**
Discharges and deaths	"	**2,432,231**	**2,635,118**	**2,789,728**	**2,914,241**	**3,003,908**
Patients in hospital at Dec. 31	"	**143,445**	**148,050**	**151,112**	**153,638**	**158,834**
Per 100,000 population	"	**938**	**943**	**940**	**926**	**932**
Patient-days	"	**56,136,909**	**58,297,570**	**60,042,682**	**60,854,293**	**62,324,201**

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[1] First admissions and readmissions. [2] Mental hospitals only; does not include psychiatric or mental units of general hospitals. [3] Tuberculosis hospitals only; does not include tuberculosis units of general hospitals. [4] Includes other types not specified.

In 1958, reporting public hospitals incurred total net expenditures of $570,900,000, the equivalent of $10.35 per patient-day, which was 99 cents more for each day of patient care than in 1957. At the same time, total income amounted to $545,400,000—$25,500,000 less than operating costs. Both income and expenditure advanced from their respective 1957 levels of $490,100,000 and $510,700,000 at approximately similar rates; as a result, "operating deficit" was $4,833,000 more at the end of 1958 than one year earlier. For "other" hospitals, costs incurred for salaries and wages amounted to 91.0 p.c. of net patient earnings; for general hospitals, to 74.5 p.c. However, since provincial government funds accounted for most of the revenue of mental institutions and tuberculosis sanatoria, such costs for the former amounted to more than seven times the value of net patient earnings, and for the latter to over 73 times the amount earned from patients. For general hospitals, total costs per patient-day were highest in British Columbia ($17.56); for tuberculosis sanatoria and "other" hospitals, in Alberta ($14.84 and $16.34, respectively); and for mental institutions, in Newfoundland ($6.71).

5.—Revenues and Expenditures of Reporting Public Hospitals, by Type of Hospital and by Province, 1958

NOTE.—Financial data for private and federal hospitals not available.

Province	Revenues				Expenditures			Cost per Patient-Day
	Net Patient Earnings	Government and Municipal Grants and Payments	Other	Total Revenue	Salaries and Wages	Other	Total Net Expenditure	
	GENERAL HOSPITALS							
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$
Newfoundland	4,198	1,676	212	6,086	3,440	2,674	6,114	14.15
Prince Edward Island	1,413	174	60	1,647	942	810	1,752	10.58
Nova Scotia	10,540	637	319	11,496	7,959	5,739	13,698	14.67
New Brunswick	9,291	1,598	187	11,076	6,655	5,370	12,025	15.79
Quebec	84,447	1,208	5,538	91,193	56,539	40,418	96,957	16.63
Ontario	125,820	12,943	4,983	143,746	101,004	50,893	151,897	17.36
Manitoba	20,189	402	423	21,014	12,778	8,102	20,880	15.60
Saskatchewan	29,375	543	643	30,561	21,172	10,844	32,016	15.81
Alberta	29,550	3,867	716	34,133	22,807	13,476	36,283	15.73
British Columbia	39,962	602	1,341	41,905	31,173	13,231	44,404	17.56
Canada[1]	**354,785**	**23,650**	**14,422**	**392,857**	**264,469**	**151,557**	**416,026**	**16.59**
	MENTAL INSTITUTIONS[2]							
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$
Newfoundland	66	2,175	—	2,241	1,181	1,060	2,241	[illegible].71
Prince Edward Island	133	484	—	617	264	353	617	3.49
Nova Scotia	530	2,932	130	3,592	1,913	1,694	3,607	3.58
New Brunswick	298	2,621	2	2,922	1,715	1,207	2,922	4.31
Quebec	2,041	13,708	772	16,522	8,341	8,598	16,940	2.61
Ontario	2,740	34,403	—	37,143	25,835	11,308	37,143	4.71
Manitoba	525	4,100	57	4,681	3,000	1,637	4,637	3.34
Saskatchewan	139	8,407	46	8,592	5,635	2,447	8,081	5.00
Alberta	708	7,451	75	8,235	5,777	2,458	8,235	4.83
British Columbia	1,088	10,817	—	11,905	6,517	5,389	11,905	5.21
Canada[1]	**8,268**	**87,098**	**1,083**	**96,449**	**60,178**	**36,149**	**96,327**	**4.08**
	TUBERCULOSIS SANATORIA[3]							
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$
Newfoundland	—	1,565	35	1,600	864	736	1,600	9.71
Prince Edward Island	4	228	29	261	145	116	261	8.70
Nova Scotia	—	1,952	301	2,253	1,291	962	2,253	11.54
New Brunswick	21	2,319	118	2,458	1,385	1,105	2,490	11.47
Quebec	71	5,186	1,188	6,445	3,185	3,413	6,598	6.84
Ontario	55	6,154	3,260	9,469	5,607	3,636	9,243	8.82
Manitoba	1	1,113	298	1,412	824	594	1,418	7.91
Saskatchewan	—	1,289	599	1,888	1,322	565	1,887	10.32
Alberta	3	2,106	255	2,364	1,628	736	2,364	14.84
British Columbia	89	1,970	237	2,296	1,653	643	2,296	14.60
Canada[1]	**244**	**23,882**	**6,320**	**30,446**	**17,904**	**12,506**	**30,410**	**9.22**
	OTHER HOSPITALS							
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$
Newfoundland	1	35	9	45	13	27	40	16.02
Prince Edward Island	—	—	—	—	—	—	—	—
Nova Scotia	355	63	34	452	268	215	483	11.03
New Brunswick	147	18	29	194	95	109	204	6.77
Quebec	8,881	518	1,440	10,839	6,224	5,279	11,503	7.69
Ontario	6,440	1,632	1,546	9,618	7,438	3,911	11,349	9.19
Manitoba	1,812	147	38	1,997	1,538	459	1,997	13.99
Saskatchewan	—	—	—	—	—	—	—	—
Alberta	384	80	162	626	436	165	601	16.34
British Columbia	1,006	752	120	1,878	1,307	650	1,957	8.78
Canada[1]	**19,026**	**3,245**	**3,378**	**25,649**	**17,319**	**10,815**	**28,131**	**8.77**

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[1] Exclusive of the Territories for which adequate information is not available.

[2] Mental hospitals only; does not include psychiatric or mental units in general hospitals.

[3] Tuberculosis hospitals only; does not include tuberculosis units in general hospitals.

Diagnoses of Patients in Mental Institutions and Tuberculosis Sanatoria.—Tables 6 and 7 summarize the most recent data available on diagnoses according to age and sex of patients on the books of mental institutions and tuberculosis sanatoria, including patients in related units located in general hospitals.

Of the 71,252 mentally ill patients on record at Dec. 31, 1958, 64.5 p.c. had been diagnosed as psychotic, 31.6 p.c. as mentally defective or otherwise affected by character, behaviour and intelligence disorders, and 2.5 p.c. as psychoneurotic. More men than women had been institutionalized for disorders of character, behaviour and intelligence, with the largest frequencies of both sexes occurring in the 10-19 age group. Similarly, more men than women (except of persons 60 years of age or over) had been diagnosed as psychotic. However, in all age groups, nearly twice as many women as men had required hospitalization for conditions diagnosed as psychoneurotic.

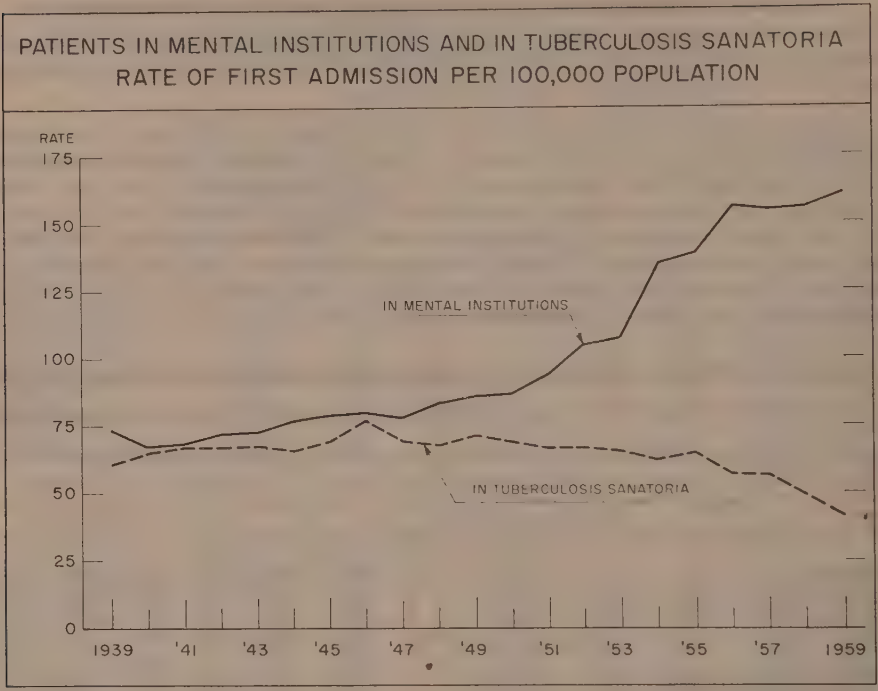
6.—Diagnoses of Patients on the Books of Reporting Mental Hospitals, by Age and Sex, 1958

NOTE.—Figures include patients in 78 mental hospitals and also patients in psychiatric and mental units of general hospitals.

Diagnosis	0-9		10-19		20-29		30-39	
	M.	F.	M.	F.	M.	F.	M.	F.
	No.	No.	No.	No.	No.	No.	No.	No.
Psychoses	**17**	**8**	**262**	**213**	**2,043**	**1,353**	**4,022**	**3,132**
Schizophrenia	13	6	198	140	1,664	1,001	3,156	2,339
Manic-depressive reaction	—	—	15	15	90	135	225	328
Of old age	—	—	—	—	—	—	—	—
Other	4	2	49	58	289	217	641	465
Psychoneuroses	—	—	**13**	**36**	**78**	**149**	**107**	**267**
Neurotic-depressive reaction	—	—	7	11	25	68	42	136
Anxiety reaction	—	—	2	5	24	21	26	39
Other	—	—	4	20	29	60	39	92
Disorders of Character, Behaviour and Intelligence	**1,172**	**961**	**3,473**	**2,509**	**2,490**	**1,974**	**1,987**	**1,607**
Alcoholism	—	—	1	—	18	11	94	21
Mental deficiency	1,074	890	3,214	2,249	2,160	1,712	1,574	1,313
Other	98	71	258	260	312	251	319	273
Non-psychiatric and Unreported Diagnoses	**19**	**21**	**41**	**34**	**56**	**26**	**71**	**48**

Diagnosis	40-49		50-59		60+		Total[1]	
	M.	F.	M.	F.	M.	F.	M.	F.
	No.	No.	No.	No.	No.	No.	No.	No.
Psychoses	**4,886**	**4,180**	**5,186**	**4,330**	**7,995**	**8,246**	**24,458**	**21,506**
Schizophrenia	3,406	2,652	2,939	2,325	3,058	2,878	14,463	11,365
Manic-depressive reaction	387	567	490	597	739	1,081	1,947	2,733
Of old age	8	9	68	45	2,037	2,434	2,117	2,492
Other	1,085	952	1,689	1,363	2,161	1,853	5,931	4,916
Psychoneuroses	**122**	**243**	**126**	**217**	**142**	**273**	**589**	**1,189**
Neurotic-depressive reaction	48	110	50	81	78	126	250	536
Anxiety reaction	18	36	17	18	13	25	101	144
Other	56	97	59	118	51	122	238	509
Disorders of Character, Behaviour and Intelligence	**1,494**	**1,350**	**999**	**875**	**892**	**737**	**12,526**	**10,025**
Alcoholism	137	34	102	16	85	17	439	99
Mental deficiency	1,133	1,108	738	724	665	613	10,572	8,621
Other	224	208	159	135	142	107	1,515	1,305
Non-psychiatric and Unreported Diagnoses	**90**	**51**	**98**	**64**	**175**	**162**	**552**	**407**

[1] Includes age groups not known.



PATIENTS IN MENTAL INSTITUTIONS AND IN TUBERCULOSIS SANATORIA
RATE OF FIRST ADMISSION PER 100,000 POPULATION

Among patients reported as on the books of tuberculosis institutions at the end of 1959, the peak frequency for men (1,301) occurred in the 60 years or over age group, and for women (671) in the 20-29 age group. More men than women were listed in each age group except those encompassing ages 10-29. Compared with 1,301 men, only 458 women aged 60 or over were carried on the books of tuberculosis sanatoria and units at Dec. 31, 1959; in contrast, the peak frequency for women aged 20-29 (671) was closely approximated in number by male patients (643).

7.—Diagnoses of Patients on the Books of Reporting Tuberculosis Hospitals, by Age and Sex, 1959

NOTE.—Figures include patients in 81 tuberculosis hospitals and also patients in tuberculosis units of general hospitals.

Diagnosis	0-9		10-19		20-29		30-39	
	M.	F.	M.	F.	M.	F.	M.	F.
	No.	No.	No.	No.	No.	No.	No.	No.
Respiratory Tuberculosis	**351**	**335**	**325**	**394**	**596**	**620**	**669**	**544**
With occupational disease of lung	—	—	—	—	—	—	2	—
Minimal pulmonary	37	24	95	120	156	190	117	111
Moderately advanced pulmonary	31	19	95	119	253	256	273	251
Far advanced pulmonary	7	2	40	64	164	145	255	167
Other and unspecified pulmonary	16	18	5	6	5	5	5	4
Pleurisy with or without effusion	13	4	27	27	16	22	17	10
Primary infection	242	255	58	55	2	2	—	—
Other	5	13	5	3	—	—	—	1
Tuberculosis, Other Forms	**42**	**48**	**60**	**45**	**47**	**51**	**48**	**27**

7.—Diagnoses of Patients on the Books of Reporting Tuberculosis Hospitals, by Age and Sex, 1959—concluded

Diagnosis	40-49		50-59		60+		Total[1]	
	M.	F.	M.	F.	M.	F.	M.	F.
	No.	No.	No.	No.	No.	No.	No.	No.
Respiratory Tuberculosis	**741**	**393**	**842**	**251**	**1,267**	**433**	**4,870**	**3,007**
With occupational disease of lung	6	1	15	—	29	—	53	1
Minimal pulmonary	103	86	111	35	127	63	761	635
Moderately advanced pulmonary	290	165	323	108	498	198	1,791	1,128
Far advanced pulmonary	327	132	378	103	585	162	1,784	788
Other and unspecified pulmonary	7	3	11	—	10	4	60	40
Pleurisy with or without effusion	8	6	3	5	16	5	102	80
Primary infection	—	—	—	—	—	—	306	315
Other	—	—	1	—	2	1	13	20
Tuberculosis, Other Forms	**42**	**34**	**33**	**18**	**34**	**25**	**317**	**250**

[1] Includes age groups not known.

Subsection 2.—Notifiable Disease and Other Health Statistics*

Health statistics collected nationally—in addition to statistics of hospitals dealt with at pp. 255-262—cover notifiable diseases, illness among federal civil servants, and home nursing services. The first two series are dealt with briefly below; the third series is based on the experience of the Victorian Order of Nurses for Canada which is the major home nursing organization in the country. Results of the latter annual survey are available in bulletin form (Catalogue No. 82-202).

Notifiable Diseases.—The incidence of notifiable diseases during 1959 was characterized by an upsurge of poliomyelitis, scarlet fever including its related disease streptococcal sore throat, and typhoid and paratyphoid fever. During 1959 there were 1,868 cases of paralytic poliomyelitis reported as compared with a median average of 369 cases for the years 1954-58. The provinces principally affected were Quebec, Newfoundland and New Brunswick. However, the rate for Canada of 10.7 per 100,000 population did not approach the 1953 level of 28.3.

Scarlet fever and streptococcal sore throat continued its normal cyclical pattern with a significant increase during 1959. A total of 22,607 cases was reported as compared with an average of 11,118 cases for the period 1954-58. Prince Edward Island, Alberta, British Columbia, Saskatchewan and Manitoba were the principal areas of infection.

The increased number of typhoid and paratyphoid cases occurred primarily in the Province of Quebec where approximately 80 p.c. of the cases occurred.

Diseases for which significant decreases occurred during 1959 were diphtheria, amœbic dysentery, meningococcal infections and other and unspecified tuberculosis. However, the incidence of the first two diseases mentioned has been relatively insignificant in recent years.

The incidence of venereal disease in Canada remains relatively constant despite the postwar introduction of antibiotics. However, vigorous case-finding programs are undoubtedly partially responsible for maintaining the number of reported cases at an undiminished level. Although the effect of this program is making itself felt in a gradually reduced incidence of syphilis, the number of cases of gonorrhœa reported during 1959 was higher than the median average for the period from 1949 to the current year.

Table **8** shows the reported cases of certain notifiable diseases during 1959. It will be noted that, for the first time, no information is carried on such diseases as chickenpox, mumps, measles and German measles. The incidence of these diseases is not now reportable since they no longer constitute a serious health problem in Canada.

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* Prepared in the Public Health Section of the Health and Welfare Division, Dominion Bureau of Statistics.

8.—Reported Cases of Selected Notifiable Diseases and Rates per 100,000 Population, by Province, 1959 with Totals for 1958

International List No.	Disease	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada[1]	
												1959	1958
		NUMBERS OF CASES											
044	Brucellosis (undulant fever)	—	—	1	—	59	25	23	—	—	6	114	113
764	Diarrhœa of the newborn, epidemic	—	2	9	—	—	—	27	—	—	53	92	[2]
055	Diphtheria	1	—	—	—	6	3	15	2	10	—	37	66
045, 046, 048	Dysentery[3]	3	22	3	15	202	452	216	14	61	418	1,408	1,562
046	Amœbic	—	—	*1*	—	—	—	—	—	—	*1*	*2*	*8*
045	Bacillary	—	*22*	*2*	*15*	*202*	*452*	*105*	*14*	*61*	*353*	*1,228*	*1,553*
082.0	Encephalitis, infectious	—	[2]	—	—	4	—	6	4	1	9	24	27
049.0, 042.1, 049.2	Food poisoning	4	2	13	82	235	—	8	52	51	374	821	[2]
092, N998.5	Hepatitis, infectious (including serum hepatitis)	231	51	389	101	104	1,040	681	672	527	915	4,715	4,515
080.2, 082.1	Meningitis, viral or aseptic	40	—	12	24	648	—	85	11	32	84	936	312
057	Meningococcal infections	42	1	12	8	12	62	14	7	6	31	195	283
766	Pemphigus neonatorum (impetigo of the newborn)	1	—	—	—	—	—	—	—	—	4	5	[2]
056	Pertussis (whooping cough)	4	30	94	12	1,618	3,830	132	88	657	647	7,112	6,932
080.0, 080.1	Poliomyelitis, paralytic	139	7	9	62	1,161	200	26	46	81	127	1,869	249
050, 051	Scarlet fever and streptococcal sore throat	354	1,889	1,447	68	3,755	2,926	984	1,780	5,132	4,261	22,607	11,118
001-019	Tuberculosis[3]	220	35	289	501	2,621	871	365	242	552	734	6,454	7,215
001, 002	Pulmonary	*219*	*30*	*239*	*460*	*2,548*	..	*318*	*182*	*451*	*594*	*5,062*	..
040, 041	Typhoid and paratyphoid fever	4	—	5	9	439	44	11	7	15	15	551	304
020-039	Venereal diseases[3]	462	20	417	330	3,247	2,694	1,681	1,522	2,634	3,652	16,917	16,751
030-035	Gonorrhœa	*433*	*8*	*374*	*280*	*2,457*	*2,167*	*1,636*	*1,433*	*2,407*	*3,363*	*14,768*	*14,733*
020-029	Syphilis	*29*	*12*	*43*	*50*	*789*	*527*	*45*	*89*	*226*	*283*	*2,141*	*2,010*
		RATES PER 100,000 ESTIMATED POPULATION											
044	Brucellosis (undulant fever)	—	—	0.1	—	1.2	0.4	2.6	—	—	0.4	0.7	0.7
764	Diarrhœa of the newborn, epidemic	—	2.0	1.3	—	—	—	3.1	—	—	3.4	0.5	[2]
055	Diphtheria	0.2	—	—	—	0.1	0.1	1.7	0.2	0.8	—	0.2	0.4
045, 046, 048	Dysentery[3]	0.7	21.6	0.4	2.5	4.0	7.6	24.4	1.6	4.9	26.6	8.1	9.2
046	Amœbic	—	—	*0.1*	—	—	—	—	—	—	*0.1*	[4]	[4]
045	Bacillary	—	*21.6*	*0.3*	*2.5*	*4.0*	*7.6*	*11.9*	*1.6*	*4.9*	*22.5*	*7.0*	*9.0*
082.0	Encephalitis, infectious	—	[2]	—	—	0.1	—	0.7	0.4	0.1	0.6	0.1	0.2
049.0, 042.1, 049.2	Food poisoning	0.9	2.0	1.8	13.9	4.7	—	0.9	5.8	4.1	23.8	4.7	[2]
092, N998.5	Hepatitis, infectious (including serum hepatitis)	51.4	50.0	54.3	17.1	2.1	17.5	76.9	74.5	42.4	58.3	27.0	26.5
080.2, 082.1	Meningitis, viral or aseptic	8.9	—	1.7	4.1	13.0	—	9.6	1.2	2.6	5.4	5.4	1.8
057	Meningococcal infections	9.4	1.0	1.7	1.4	0.2	1.0	1.6	0.8	0.5	2.0	1.1	1.7
766	Pemphigus neonatorum (impetigo of the newborn)	0.2	—	—	—	—	—	—	—	—	0.3	[4]	[2]
056	Pertussis (whooping cough)	0.9	29.4	13.1	2.0	32.4	64.3	14.9	9.8	52.9	41.2	40.8	40.7
080.0, 080.1	Poliomyelitis, paralytic	31.0	6.9	1.3	10.0	23.2	3.4	2.9	5.1	6.5	8.1	10.7	1.5
050, 051	Scarlet fever and streptococcal sore throat	78.8	1,851.8	202.0	11.5	75.1	49.2	111.2	197.3	412.9	271.4	129.6	65.3
001-019	Tuberculosis[3]	49.0	34.3	40.4	84.9	52.4	14.6	41.2	26.8	44.4	46.8	37.0	42.4
001, 002	Pulmonary	*48.8*	*29.4*	*33.4*	*78.0*	*51.0*	..	*35.9*	*20.2*	*36.3*	*37.8*	*29.0*	..
040, 041	Typhoid and paratyphoid fever	0.9	—	0.7	1.5	8.8	0.7	1.2	0.8	1.2	1.0	3.2	1.8
020-039	Venereal diseases[3]	102.9	19.6	58.2	55.9	64.9	45.3	189.9	168.7	211.9	232.6	97.0	98.4
030-035	Gonorrhœa	*96.4*	*7.8*	*52.2*	*47.4*	*49.1*	*36.4*	*184.9*	*158.9*	*193.6*	*214.2*	*84.7*	*86.5*
020-029	Syphilis	*6.5*	*11.8*	*6.0*	*8.5*	*15.8*	*8.9*	*5.1*	*9.9*	*18.2*	*18.0*	*12.3*	*11.8*

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[1] Includes the Yukon and Northwest Territories in 1959 and the Yukon in 1958.
[2] Not reportable.
[3] Includes other cases and cases where type not specified.
[4] Less than 0.05 per 100,000 population.

Illness in the Federal Civil Service.—A study of the incidence and duration of illness among federal civil servants is made annually from data supplied by medical certificates, which are required for all absences of more than three days at one time and for absence of any duration after seven days of casual leave have been taken. During the calendar year 1959, of an estimated 141,000 civil servants covered by Civil Service Leave Regulations, 50,493 reported ill by medical certificate. The number of new illnesses, as certified by medical certificate, was 75,951, somewhat higher than the 68,489 reported for 1958. Similarly, the number of days of completed illnesses increased to 1,070,084 in 1959 from the 1,039,449 reported for 1958. Other relevant statistics for 1959 indicate that, on the average, 7.8 working days were lost through illness by each employee, including 5.1 days certified and 2.7 days casual sick leave.

Several indices related to sickness absenteeism were calculated from the 1959 survey, based on the number of certified illnesses that occurred at some time during the year but not necessarily completed during the same year. These illnesses totalled 78,288. The severity rate or average number of calendar days per illness was 13.3 and the average number of working days was 9.2. The frequency rate or the average number of illnesses per 100 employees was 55.5. In addition, for each working day during the year, about two of every 100 civil servants were absent on certified sick leave.

9.—Rates per 1,000 Employees of Illnesses and Days of Illness for Federal Civil Servants, by Cause, 1959

(Certified sick leave only)

International List Number	Cause	Rates per 1,000 Employees	
		Illnesses	Days of Illness
		No.	No.
001–138	Infective and parasitic diseases	13.2	308.9
140–239	Neoplasms	7.9	284.4
240–289	Allergic, endocrine system, metabolic, and nutritional diseases	11.4	181.4
290–299	Diseases of the blood and blood-forming organs	1.7	39.7
300–326	Mental, psychoneurotic, and personality disorders	14.9	439.2
330–398	Diseases of the nervous system and sense organs	21.4	343.9
400–468	Diseases of the circulatory system	26.9	851.6
470–527	Diseases of the respiratory system	248.5	1,890.6
530–587	Diseases of the digestive system	74.8	1,077.3
590–637	Diseases of the genito-urinary system	22.9	366.5
640–689	Deliveries and complications of pregnancy, childbirth, and the puerperium	2.2	26.5
690–716	Diseases of the skin and cellular tissue	16.6	195.9
720–749	Diseases of the bones and organs of movement	31.0	480.0
750–759	Congenital malformations	0.5	15.9
780–795	Symptoms, senility, and ill-defined conditions	23.5	311.8
N800–N999	Accidents, poisonings, and violence	35.7	572.6
	Totals, All Illnesses	**555.2**	**7,402.9**

PART II.—PUBLIC WELFARE AND SOCIAL SECURITY

Responsibility for social welfare is shared by all levels of government. Costly income maintenance measures such as old age security and family allowances, or programs such as unemployment insurance and the National Employment Service where nation-wide co-ordination is required are administered federally. Substantial federal aid is given to the provinces in meeting the costs of social assistance. The Federal Government also provides services for special groups such as Indians, Eskimos and immigrants.

The Department of National Health and Welfare is the agency generally responsible for federal welfare matters; the Departments of Veterans Affairs, Citizenship and Immigration, and Northern Affairs and National Resources also operate important programs. The Unemployment Insurance Commission is responsible for the operation of unemployment insurance and the National Employment Service.

Administration of welfare services is primarily a responsibility of the province but the provision of services is often assumed by local authorities, generally with financial aid from the province.

Section 1.—Federal Government Programs

Subsection 1.—Family Allowances

The Family Allowances Act of 1944 is designed to assist in providing equal opportunity for all Canadian children. The allowances do not involve a means test and are paid entirely from the federal Consolidated Revenue Fund. They do not constitute taxable income but there is a smaller income tax exemption for children eligible for allowances.

Allowances are payable in respect of every child under the age of 16 years who was born in Canada, or who has been a resident of the country for one year, or whose father or mother was domiciled in Canada for three years immediately prior to the birth of the child. Payment is made each month, normally to the mother, although any person who substantially maintains the child may be paid the allowance on his behalf. Allowances are paid at the monthly rate of $6 for each child under 10 years of age and $8 for each child aged 10 or over but under 16 years. The allowances are paid by cheque, except for some Eskimo and Indian children in remote areas for whom payment is made largely in kind because of lack of exchange facilities and the desirability for education in the use of nutritive foods.

If the allowances are not spent for the purposes outlined in the Act, payment may be discontinued or made to some other person or agency on behalf of the child. Allowances are not payable for any child who fails to comply with provincial school regulations or on behalf of a girl who is married and under 16 years of age.

The program is administered by the Department of National Health and Welfare through regional offices located in each provincial capital. A welfare section in each regional office deals with welfare questions arising from administration of the allowances. Issuing of the cheques is the responsibility of the treasury division of each regional office, which reports to the Chief Treasury Officer of the Department of Finance attached to the Department of National Health and Welfare. The Regional Director for the Yukon and Northwest Territories is located in Ottawa.

Through the Department of Citizenship and Immigration, the Federal Government pays family assistance at the rate of $5 a month for each child under 16 years of age supported by an immigrant who has landed for permanent residence in Canada, or by a Canadian returning to Canada to reside permanently. This allowance, which is paid quarterly and for a maximum period of one year, is not payable to a child receiving family allowances.

1.—Family Allowances Statistics, by Province, Years Ended Mar. 31, 1958-60

Province and Year	Families Receiving Allowance in March	Children for Whom Allowance Paid in March	Average Number of Children per Family in March	Average Allowance[1]		Net Total Allowances Paid during Fiscal Year
				Per Family	Per Child	
	No.	No.	No.	$	$	$
Newfoundland..........1958	60,961	187,035	3.07	20.40	6.65	14,131,153
1959	62,203	192,030	3.09	20.57	6.66	15,162,900
1960	63,245	196,447	3.11	20.72	6.67	15,566,372
Prince Edward Island....1958	13,240	36,839	2.78	18.61	6.69	2,824,310
1959	13,443	37,426	2.78	18.72	6.72	2,994,334
1960	13,648	38,174	2.80	18.83	6.73	3,062,692
Nova Scotia............1958	101,509	253,713	2.50	16.71	6.68	19,400,493
1959	103,105	258,684	2.51	16.79	6.69	20,560,462
1960	103,872	261,720	2.52	16.89	6.70	20,932,794
New Brunswick.........1958	79,237	224,047	2.83	18.89	6.68	17,074,970
1959	80,857	229,505	2.84	19.00	6.69	18,201,518
1960	81,541	232,891	2.86	19.15	6.70	18,588,795

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[1] Based on gross payment for March.

1.—Family Allowances Statistics, by Province, Years Ended Mar. 31, 1958-60—concluded

Province or Territory and Year		Families Receiving Allowance in March	Children for Whom Allowance Paid in March	Average Number of Children per Family in March	Average Allowance[1]		Net Total Allowances Paid during Fiscal Year
					Per Family	Per Child	
		No.	No.	No.	$	$	$
Quebec	1958	664,852	1,786,800	2.69	18.02	6.70	136,080,634
	1959	686,872	1,848,138	2.69	18.01	6.69	146,278,435
	1960	704,831	1,894,276	2.69	18.00	6.70	150,462,531
Ontario	1958	833,495	1,825,274	2.19	14.59	6.66	136,706,314
	1959	870,582	1,922,653	2.21	14.69	6.65	150,186,253
	1960	894,046	1,997,413	2.23	14.87	6.65	156,681,500
Manitoba	1958	124,257	283,863	2.28	15.22	6.66	21,520,778
	1959	126,989	292,697	2.30	15.34	6.66	23,091,594
	1960	128,923	300,305	2.33	15.51	6.66	23,730,765
Saskatchewan	1958	127,904	306,045	2.39	15.89	6.64	23,241,829
	1959	130,210	313,926	2.41	16.03	6.65	24,789,278
	1960	131,320	319,788	2.43	16.23	6.66	25,363,936
Alberta	1958	179,237	414,550	2.31	15.36	6.64	31,029,720
	1959	187,561	437,883	2.33	15.51	6.64	34,122,637
	1960	193,721	457,672	2.36	15.69	6.64	35,765,854
British Columbia	1958	217,009	466,169	2.15	14.35	6.68	34,969,036
	1959	225,492	488,891	2.17	14.49	6.68	38,409,308
	1960	230,549	506,895	2.20	14.72	6.69	39,984,176
Yukon and Northwest Territories	1958	5,033	12,045	2.39	15.87	6.63	907,321
	1959	5,267	13,423	2.55	17.21	6.75	990,349
	1960	5,568	14,408	2.59	16.44	6.35	1,074,944
Canada	**1958**	**2,406,734**	**5,796,380**	**2.41**	**16.08**	**6.68**	**437,886,560**
	1959	**2,492,581**	**6,035,256**	**2.42**	**16.15**	**6.67**	**474,787,068**
	1960	**2,551,264**	**6,219,989**	**2.44**	**16.27**	**6.67**	**491,214,359**

[1] Based on gross payment for March.

Subsection 2.—Old Age Security

The Old Age Security Act of 1952, as amended, provides a universal pension of $55 a month, payable by the Federal Government to all persons aged 70 or over, subject to a residence qualification. To qualify for pension a person must have resided in Canada for ten years immediately preceding its commencement or, if absent during that period, must have been actually present in Canada prior to it for double any period of absence and must have resided in Canada at least one year immediately preceding commencement of pension. A 1960 amendment to the Act provides that payment of pension may be continued for any period of residence outside Canada if the pensioner has resided in Canada for at least 25 years after attaining the age of 21 or, if he has not, it may be continued for six consecutive months exclusive of the month of departure from Canada.

Until 1959, the pension was financed on a pay-as-you-go method through a 2-p.c. sales tax, a 2-p.c. tax on corporation income and, subject to a limit of $60 a year, a 2-p.c. tax on personal income. Effective Jan. 1, 1959, the tax on corporation income and from Apr. 9, 1959, the sales tax, were raised to 3 p.c.; the rate on taxable personal income was raised to 3 p.c., with a maximum of $75 for 1959. Beginning with 1960, the maximum tax on taxable personal income rose to $90 a year. Taxes are paid into the Old Age Security Fund. If they are insufficient to meet the pension payments, temporary loans or grants are made from the Consolidated Revenue Fund. The pension is paid from the Consolidated Revenue Fund and charged to the Old Age Security Fund. The program is administered by the Department of National Health and Welfare through regional offices located in each provincial capital.

Persons in receipt of old age assistance (see p. 271) who reach age 70 are automatically transferred to old age security. Others make application to the regional office.

British Columbia, Alberta and Saskatchewan make supplementary payments to those recipients of old age security who qualify under a means and residence test. In British Columbia the allowance may not exceed $24 a month, in Alberta $15 a month, and in Saskatchewan it is a minimum of $2.50 a month rising to a maximum of $10 a month. In Ontario, the provincial government shares to the extent of 80 p.c. in the first $20 a month of supplement paid by a municipality to a needy recipient of old age security. In Manitoba, the province may pay a social allowance to a recipient of old age security unable to provide the basic necessities of life. In some provinces and in Yukon Territory, recipients of the pension who are in special need may be eligible for relief.

2.—Operations of the Old Age Security Fund, Years Ended Mar. 31, 1956-60

Item	Year Ended Mar. 31—				
	1956	1957	1958	1959	1960
	$	$	$	$	$
Revenue	**366,218,474**	**379,111,374**	**473,859,104**	**559,279,858**	**574,887,046**
Individual income tax	102,500,000	124,999,000	135,001,000	146,350,000	185,550,000
Corporation income tax	53,328,000	67,336,000	60,664,000	55,328,000	91,336,000
Sales tax	160,377,617	179,270,141	175,792,442	173,622,697	270,000,055
Grant from Consolidated Revenue Fund	—	6,000,000	102,401,662	183,979,162	—
Loan from Consolidated Revenue Fund	50,012,857[1]	1,506,233[1]	—	—	28,000,991
Expenditure (Benefit Payments)	**366,218,474**	**379,111,374**	**473,859,104**	**559,279,858**	**574,887,046**

[1] Loans from Consolidated Revenue were written off by grants from the Consolidated Revenue Fund in following fiscal years.

3.—Old Age Security Statistics, by Province, Years Ended Mar. 31, 1958-60

Province and Year	Pensioners in March	Pensions Paid during Fiscal Year (net)	Province or Territory and Year	Pensioners in March	Pensions Paid during Fiscal Year (net)
	No.	$		No.	$
Newfoundland 1958	16,557	9,490,737	Manitoba 1958	50,079	28,562,399
1959	16,782	11,012,906	1959	52,066	34,029,850
1960	17,008	11,131,339	1960	53,284	35,046,515
Prince Edward Island 1958	7,100	4,139,668	Saskatchewan 1958	51,300	29,420,360
1959	7,153	4,809,942	1959	53,469	35,099,989
1960	7,278	4,823,008	1960	55,233	36,311,467
Nova Scotia 1958	39,694	23,008,418	Alberta 1958	53,319	30,443,217
1959	40,395	26,780,353	1959	55,968	36,534,769
1960	40,679	27,012,650	1960	58,386	38,153,437
New Brunswick 1958	28,956	16,747,674	British Columbia 1958	104,297	59,408,009
1959	29,509	19,583,702	1959	108,396	70,769,169
1960	29,965	19,906,303	1960	111,742	73,155,743
Quebec 1958	174,476	99,490,164	Yukon and Northwest Territories. 1958	599	344,305
1959	179,829	116,993,184	1959	623	408,856
1960	184,500	120,318,812	1960	608	411,690
Ontario 1958	301,183	172,804,152	**Canada 1958**	**827,560**	**473,859,103**
1959	310,094	203,257,138	**1959**	**854,284**	**559,279,858**
1960	317,727	208,616,082	**1960**	**876,410**	**574,887,046**

Subsection 3.—Other Federal Government Programs

Unemployment Insurance and National Employment Service.—In 1940, by an amendment to the British North America Act, the Federal Government was given jurisdiction in the field of unemployment insurance and the Unemployment Insurance Act was passed, establishing a national system of unemployment insurance which is outlined in Chapter XVI.

The National Employment Service is operated in conjunction with the unemployment insurance scheme. It is administered through local employment and claims offices and supervised by the Department of Labour. Statistics of positions offered and placements made are given in Chapter XVI.

Prairie Farm Assistance.—The Prairie Farm Assistance Act is administered by the Department of Agriculture; a description of the legislation is given in Chapter IX.

Welfare Services for Indians and Eskimos.—The welfare of Indians and Eskimos is administered by the Department of Citizenship and Immigration and the Department of Northern Affairs and National Resources, respectively; this field is covered in the Population Chapter, pp. 170-176.

Section 2.—Federal-Provincial Programs

Subsection 1.—Old Age Assistance

The Old Age Assistance Act of 1952, as amended, provides for federal reimbursement to the provinces for assistance to persons aged 65 or over who are in need and who have resided in Canada for at least ten years or who, if absent from Canada during this period, have been present in Canada prior to the commencement of the ten-year period for double any period of absence. On reaching age 70 a pensioner is transferred to old age security. The federal contribution may not exceed 50 p.c. of $55 a month or of the assistance paid, whichever is less. The province administers the program and, within the limits of the federal Act, may fix the amount of assistance payable, the maximum income allowed and other conditions of eligibility. All provinces and territories use a maximum payment of $55 a month.

For an unmarried person, total income allowed, including assistance, may not exceed $960 a year. For a married couple it may not exceed $1,620 a year or, when the spouse is blind within the meaning of the Blind Persons Act, $1,980 a year. Assistance is not paid to a person receiving an old age security pension or an allowance under the Blind Persons Act, the Disabled Persons Act, or War Veterans Allowance Act.

British Columbia, Alberta and Yukon Territory make supplementary payments to recipients of old age assistance who qualify under a means and residence test. In British Columbia the allowance may not exceed $24 a month, in Alberta $15 a month, and in the Yukon $10 a month. In Ontario, the provincial government shares to the extent of 80 p.c. in the first $20 a month of the supplement paid by a municipality to a needy recipient of old age assistance. In Manitoba, the province may pay a social advance to a recipient of old age assistance unable to provide the basic necessities of life. In some provinces and in the Yukon, recipients of old age assistance who are in special need may be eligible for relief.

4.—Old Age Assistance Statistics, by Province, Years Ended Mar. 31, 1958-60

Province or Territory and Year		Recipients in Month of March	Average Amount of Monthly Assistance	P.C. of Recipients to Population Age 65-69	Federal Government Contribution during Year
		No.	$		$
Newfoundland	1958	5,119	53.63[1]	57.52	1,298,770
	1959	5,378	53.20	61.11	1,715,386
	1960	5,377	53.15	61.10	1,736,291
Prince Edward Island	1958	659	45.55[1]	19.97	142,258
	1959	756	44.45	22.24	191,759
	1960	750	45.69	22.06	204,935
Nova Scotia	1958	5,219	50.15[1]	26.10	1,318,055
	1959	5,485	49.40	27.29	1,611,693
	1960	5,477	48.82	27.11	1,619,495
New Brunswick	1958	5,724	52.46[1]	37.17	1,559,905
	1959	5,795	51.62	37.63	1,829,266
	1960	5,682	51.33	36.90	1,788,696
Quebec	1958	32,318	52.45[1]	30.84	8,702,893
	1959	34,134	51.88	32.23	10,593,250
	1960	34,312	51.69	31.65	10,688,586
Ontario	1958	21,077	51.76[1]	12.56	5,650,281
	1959	22,381	48.96	13.28	6,707,318
	1960	22,544	48.79	13.15	6,608,363
Manitoba	1958	4,474	53.37[1]	15.48	1,297,[illegible]15
	1959	4,836	51.98	17.27	1,572,890
	1960	4,998	51.55	17.79	1,580,928
Saskatchewan	1958	5,129	52.52[1]	17.45	1,435,188
	1959	5,537	51.35	19.50	1,763,549
	1960	5,726	50.64	20.30	1,757,281
Alberta	1958	5,715	51.33[1]	18.26	1,538,751
	1959	6,096	50.62	19.54	1,877,243
	1960	6,336	50.52	20.05	1,955,780
British Columbia	1958	6,906	52.91[1]	12.86	1,979,058
	1959	7,276	51.96	13.73	2,291,662
	1960	7,391	51.67	14.21	2,353,789
Yukon Territory	1958	41	46.00[2]	21.47	9,726
	1959	38	55.00	19.90	13,280
	1960	52	54.90	27.23	14,982
Northwest Territories	1958	103	53.99[1]	48.58	29,385
	1959	124	51.20	58.49	39,989
	1960	128	52.39	60.38	40,267
Canada	**1958**	**92,484**	**52.19**	**19.94**	**24,961,383**
	1959	**97,836**	**50.97**	**20.91**	**30,207,284**
	1960	**98,773**	**50.74**	**21.11**	**30,349,393**

[1] During fiscal year maximum raised from $40 to $55 a month. [2] During fiscal year monthly maximum raised from $40 to $46; raised to $55 in May 1958, retroactive to Nov. 1, 1957.

Subsection 2.—Allowances for Blind Persons

The Blind Persons Act of 1952, as amended, provides for federal reimbursement to the provinces for allowances to blind persons aged 18 or over who are in need and who have resided in Canada for at least ten years. The federal contribution may not exceed 75 p.c. of $55 a month or of the allowance paid, whichever is less. The province administers the program and, within the limits of the federal Act, may fix the amount of allowance payable and the maximum income allowed. All provinces use a maximum payment of $55 a month.

To qualify for an allowance a person must meet the required definition of blindness and have resided in Canada for ten years immediately preceding commencement of allowance or, if absent from Canada during this period, must have been present in Canada prior to its commencement for a period equal to double any period of absence.

For an unmarried person, total income including the allowance may not exceed $1,200 a year; for a person with no spouse but with one or more dependent children, $1,680; for a married couple, $1,980. When the spouse is also blind, income of the couple may not exceed $2,100. Allowances are not payable to a person receiving assistance under the Old Age Assistance Act, an allowance under the Disabled Persons Act or the War Veterans Allowance Act, a pension under the Old Age Security Act or a pension for blindness under the Pensions Act.

British Columbia, Alberta, Saskatchewan and Yukon Territory make supplementary payments to recipients of blindness allowances who qualify under income and residence tests. In British Columbia a flat rate allowance of $24 a month is payable, in Alberta the supplement may not exceed $15 a month, and in the Yukon $10 a month. In Saskatchewan, a minimum of $2.50 a month is payable, rising to $10 a month. In Ontario, the government shares to the extent of 80 p.c. in the first $20 a month paid by a municipality to a needy recipient. In Manitoba, the province may pay a social allowance to a recipient of a blindness allowance unable to provide the basic necessities of life.

5.—Statistics of Allowances for the Blind, by Province, Years Ended Mar. 31, 1958-60

Province or Territory and Year	Recipients in Month of March	Average Amount of Monthly Allowance	P.C. of Recipients to Population Age 20-69	Federal Government Contribution during Year
	No.	$		$
Newfoundland....1958	376	54.45[1]	0.190	152,688
1959	407	54.41	0.201	199,975
1960	418	54.15	0.203	200,644
Prince Edward Island....1958	96	53.13[1]	0.198	37,568
1959	87	53.48	0.178	43,338
1960	85	53.21	0.170	41,587
Nova Scotia....1958	745	53.92[1]	0.204	312,969
1959	787	53.40	0.215	376,544
1960	773	53.51	0.210	378,592
New Brunswick....1958	715	53.94[1]	0.258	310,481
1959	724	53.90	0.256	357,742
1960	706	53.88	0.246	348,797
Quebec....1958	2,956	54.41[1]	0.117	1,264,975
1959	3,056	54.06	0.118	1,500,856
1960	3,012	54.06	0.114	1,493,920
Ontario....1958	1,720	53.73[1]	0.053	735,344
1959	1,833	50.75	0.055	867,247
1960	1,847	50.27	0.055	839,340
Manitoba....1958	392	54.33[1]	0.082	170,031
1959	409	53.51	0.086	198,649
1960	396	53.29	0.082	195,336
Saskatchewan....1958	412	53.32[1]	0.088	176,095
1959	417	53.01	0.089	203,034
1960	397	53.70	0.084	195,614
Alberta....1958	451	53.63[1]	0.071	188,604
1959	464	53.22	0.072	223,721
1960	459	53.43	0.069	223,443
British Columbia....1958	505	53.67[1]	0.059	213,809
1959	530	53.61	0.060	248,774
1960	541	53.59	0.061	263,063
Yukon Territory....1958	5	46.00[2]	0.068	2,300
1959	5	55.00	0.069	2,506
1960	3	55.00	0.041	1,815
Northwest Territories....1958	27	51.85[1]	0.260	10,861
1959	28	51.96	0.270	12,746
1960	34	49.08	0.328	14,936
Canada....1958	**8,400**	**54.02**	**0.092**	**3,575,724**
1959	**8,747**	**53.15**	**0.094**	**4,235,131**
1960	**8,671**	**53.05**	**0.092**	**4,197,087**

[1] During fiscal year maximum assistance was raised from $40 to $55 a month.

[2] During fiscal year maximum raised from $40 to $46 a month; raised to $55 a month in May 1958, retroactive to Nov. 1, 1957.

Subsection 3.—Allowances for Disabled Persons

The Disabled Persons Act of 1954, as amended, provides for federal reimbursement to the provinces for allowances paid to permanently and totally disabled persons aged 18 or over who are in need and who have resided in Canada for at least ten years immediately preceding commencement of allowance or, if absent from Canada during this period, have been present in Canada prior to its commencement for a period equal to double any period of absence. To qualify for an allowance a person must meet the definition of permanent and total disability set out in the Regulations to the Act which requires that a person must be suffering from a major physiological, anatomical or psychological impairment, verified by objective medical findings; the impairment must be one that is likely to continue indefinitely without substantial improvement and that will severely limit activities of normal living. The federal contribution may not exceed 50 p.c. of $55 a month or of the allowance paid, whichever is less. All provinces and territories use a maximum payment of $55 a month. The province administers the program and, within the limits of the federal Act, may fix the amount of allowance payable, the maximum income allowed and other conditions of eligibility.

For an unmarried person, total income including the allowance may not exceed $960 a year. For a married couple the limit is $1,620 a year except that if the spouse is blind within the meaning of the Blind Persons Act, income of the couple may not exceed $1,980 a year. Allowances are not paid to a person receiving an allowance under the Blind Persons Act or the War Veterans Allowance Act, assistance under the Old Age Assistance Act, a pension under the Old Age Security Act, or a mother's allowance.

The allowance is not payable to a patient in a mental institution or tuberculosis sanatorium. A recipient who is resident in a nursing home, an infirmary, a home for the aged, an institution for the care of incurables or a private, charitable or public institution is eligible for the allowance only if the major part of the cost of his accommodation is being paid by himself or any other individual. When a recipient is required to enter a public or private hospital, the allowance may be paid for no more than two months of hospitalization in a calendar year, excluding months of admission and release, but for the period that a recipient is in hospital for therapeutic treatment for his disability or rehabilitation, as approved by the provincial authority, the allowance may continue to be paid. The provincial authority must suspend the payment of the allowance when in its opinion the recipient unreasonably neglects or refuses to comply with or to avail himself of training, rehabilitation or treatment facilities provided by or available in the province.

In the fifth year of the program, disabilities in the two medical classes—mental, psychoneurotic and personality disorders, and diseases of the nervous system and sense organs—were again found to be most prevalent among those persons becoming eligible for an allowance. These classes accounted for 53.9 p.c. of the new cases, an increase over the 47.5 p.c. in the year ended Mar. 31, 1959. Neoplasms and diseases of the respiratory system also increased slightly over the previous year. Other classes, however, such as diseases of the circulatory system, diseases of the bones and organs of movement, and infective and parasitic disease, continued to decline. Mental deficiency, the most frequently occurring disability, rose from one-fifth to nearly one-quarter of all cases granted an allowance.

British Columbia pays a flat rate supplement of $24 a month to recipients of disability allowances who qualify under a residence test. In Ontario, the government shares to the extent of 80 p.c. in the first $20 a month paid by a municipality to a needy recipient. In Manitoba, the province may pay a social allowance to a recipient of a disability allowance unable to provide the basic necessities of life. In some provinces and in Yukon Territory, recipients in special need may also be eligible for relief.

6.—Statistics of Allowances for Disabled Persons, by Province, Years Ended Mar. 31, 1958-60

Province or Territory and Year		Recipients in Month of March	Average Amount of Monthly Allowance	P.C. of Recipients to Population Age 20-69	Federal Government Contribution during Year
		No.	$		$
Newfoundland	1958	822	54.78[1]	0.415	205,845
	1959	980	54.69	0.483	302,224
	1960	1,128	54.56	0.547	348,586
Prince Edward Island	1958	460	52.12[1]	0.950	113,222
	1959	596	51.28	1.219	169,016
	1960	650	52.73	1.303	197,988
Nova Scotia	1958	1,790	52.56[1]	0.491	456,948
	1959	2,184	52.65	0.596	662,727
	1960	2,484	52.67	0.675	759,333
New Brunswick	1958	1,474	54.62[1]	0.531	404,650
	1959	1,734	54.24	0.614	552,338
	1960	1,874	54.20	0.652	596,463
Quebec	1958	22,929	53.75[1]	0.905	6,048,901
	1959	25,352	53.94	0.980	8,362,518
	1960	25,103	54.01	0.951	8,307,354
Ontario	1958	9,412	54.24[1]	0.289	2,523,956
	1959	11,469	53.88	0.345	3,485,924
	1960	12,354	53.76	0.365	3,858,355
Manitoba	1958	1,028	54.36[1]	0.215	273,555
	1959	1,230	54.14	0.258	381,004
	1960	1,376	53.98	0.285	433,097
Saskatchewan	1958	1,146	54.20[1]	0.244	317,011
	1959	1,248	54.15	0.266	405,443
	1960	1,337	54.28	0.283	433,211
Alberta	1958	1,492	53.59[1]	0.235	396,826
	1959	1,648	53.09	0.254	515,932
	1960	1,702	53.06	0.256	536,720
British Columbia	1958	1,281	54.18[1]	0.150	349,100
	1959	1,585	53.98	0.181	490,156
	1960	1,866	54.00	0.211	574,686
Yukon Territory	1958	...	...	...	...
	1959	2	55.00	0.027	192
	1960	3	55.00	0.041	770
Northwest Territories	1958	6	55.00	0.058	1,651
	1959	12	54.58	0.116	2,893
	1960	12	55.00	0.116	3,951
Canada	**1958**[2]	**41,840**	**53.88**	**0.459**	**11,091,664**
	1959	**48,040**	**53.84**	**0.517**	**15,330,368**
	1960	**49,889**	**53.86**	**0.528**	**16,050,514**

[1] During fiscal year maximum payment increased from $40 to $55 a month. [2] Excluding Yukon Territory.

Subsection 4.—Unemployment Assistance

Under the Unemployment Assistance Act of 1956 as amended in 1957, the Federal Government may share with a province and its municipalities 50 p.c. of the cost of financial assistance to unemployed persons. No distinction is made in the legislation between the employable and the unemployable.

Reimbursement is made to the province for payments within the existing provincial framework of general assistance. The scale and conditions of relief payments to recipients continue to be determined by the provinces and municipalities, except that the province agrees not to make length of residence a condition for the receipt of assistance when an applicant comes from another province which has signed a similar agreement.

The Act provides for federal sharing of provincial and municipal payments for persons in certain types of homes for special care, including homes for the aged and nursing homes. It excludes federal reimbursement for payments for persons receiving mothers' allowances. Those receiving various types of social security payments under other programs are also excluded but the Federal Government shares with the provinces any additional relief payments, other than cost-of-living bonuses or across-the-board pension supplements, made to such persons who are unemployed and in need. Health care and administration costs are also excluded from Federal Government reimbursement.

All parts of Canada have been participating in this program since the beginning of 1959. Agreements for the payment of federal assistance, effective July 1, 1955, were made with five provinces—Newfoundland, Prince Edward Island, Manitoba, Saskatchewan and British Columbia. New Brunswick and Ontario entered the scheme, effective Jan. 1, 1956 and Dec. 1, 1956, respectively; and Nova Scotia and Alberta, effective Jan. 1, 1958. At the end of 1958 the Northwest Territories signed an agreement effective Jan. 1 of that year and in 1959 Quebec and Yukon Territory entered into agreements effective July 1, 1958 and Jan. 1, 1959, respectively.

7.—Unemployment Assistance, by Province, Years Ended Mar. 31, 1958-60

Province or Territory and Year		Federal Share of Unemployment Assistance Costs	Recipients in March
		$	No.
Newfoundland	1958	1,787,626	45,799
	1959	3,269,622	58,264
	1960	3,529,898	52,505
Prince Edward Island	1958	73,010	1,724
	1959	83,622	1,418
	1960	113,912	2,258
Nova Scotia	1958[1]	76,273	5,083
	1959	431,001	9,209
	1960	664,878	11,093
New Brunswick	1958	94,217	5,800
	1959	265,812	7,589
	1960	360,559	9,077
Quebec[2]	1959	4,128,915	52,059
	1960	6,085,922	62,446
Ontario	1958	3,644,779	61,623
	1959	10,127,817	79,385
	1960	11,669,544	83,762
Manitoba	1958	1,085,006	12,785
	1959	2,067,829	16,065
	1960	2,868,333	20,165
Saskatchewan	1958	813,080	12,873
	1959	1,492,338	15,507
	1960	1,823,968	18,920
Alberta	1958[1]	410,443	11,845
	1959	1,847,748	15,899
	1960	2,098,350	17,636
British Columbia	1958	2,828,568	24,522
	1959	6,001,341	39,388
	1960	7,305,454	42,876
Yukon Territory	1959[3]	6,687	101
	1960	32,642	147
Northwest Territories	1958[1]	3,868	81
	1959	15,765	157
	1960	26,197	174
Totals	**1958**	**10,816,870**	**182,135**
	1959	**29.738,497**	**295,041**
	1960	**36,579,658**	**321,059**

[1] Agreement effective Jan. 1, 1958.

[2] Agreement effective July 1, 1958. Payments represent 80 p.c. of the amount claimed pending completion of the audits, and a deduction of 1,500 persons has been made for the number of persons assisted.

[3] Agreement effective Jan. 1, 1959.

Section 3.—Provincial Programs

Subsection 1.—Mothers' Allowances

All provinces make provision for allowances to needy mothers who are deprived of the breadwinner and are unable to maintain their dependent children without assistance. These programs have undergone a number of changes in recent years. Eligibility requirements have been extended and liberalized. A number of provinces are combining mothers' allowances in a broadened program of provincial allowances to several categories of persons with long-term need. There is a tendency to incorporate this legislation with general asistance within a single Act, while continuing separate administration. In British Columbia, on the other hand, aid to needy mothers is provided under the general assistance program and in the same way as to other needy persons.

Subject to conditions of eligibility which vary from province to province, mothers' allowances are payable from provincial funds to applicants who are widowed or whose husbands are mentally incapacitated and, except in Alberta, to those whose husbands are physically disabled and unable to support their families. They are also payable to deserted wives who meet specified conditions; in several provinces to mothers whose husbands are in penal institutions, or who are divorced or legally separated; in some, to unmarried mothers; and in Ontario, Quebec and Nova Scotia to Indian mothers. Foster mothers may be eligible under particular circumstances in most provinces.

The number of families and children assisted and amounts of benefits paid as at Mar. 31, 1959 and 1960 are given in Table **8** and rates of benefit as at July 1960 in Table **9**.

The age limit for children is 16 years in most provinces with provision made to extend payment for a specified period if the child is attending school or if he is physically or mentally handicapped. In all provinces applicants must satisfy conditions of need and residence but the amount of outside income and resources allowed and the length of residence required prior to application vary, the most common period being one year, although in one province it is five years. Two provinces have citizenship requirements.

In each province the relevant legislation is administered by public welfare authorities. In some provinces a Mothers' Allowances Board or Commission makes the final decision regarding eligibility and the amount of allowances granted, or acts in an advisory capacity.

8.—Mothers' Allowances, by Province, as at Mar. 31, 1959 and 1960

Province and Year		Families Assisted	Children Assisted	Payments
		No.	No.	$
Newfoundland	1959	3,770	10,250[1]	2,859,072[1]
	1960	4,024	12,898	3,225,273[1]
Prince Edward Island	1959	276	729	128,982
	1960	267	683	130,510
Nova Scotia	1959	2,196	5,483	1,887,882
	1960	2,210	5,707	1,920,450
New Brunswick	1959	2,235	6,495	1,365,075
	1960	2,213	6,507	1,377,985
Quebec	1959	22,403	64,969	18,991,476
	1960	25,778	72,178	20,156,395
Ontario	1959	9,433	22,632	11,033,373
	1960	9,722	23,790	12,139,979
Manitoba	1959	823	2,263	1,324,993
	1960	1,209	3,300[2]	1,900,000[2]
Saskatchewan	1959	2,222	5,491	2,030,322
	1960	2,242	5,563	1,949,697
Alberta	1959	2,093	4,768	1,857,031
	1960	2,272	5,153	2,084,682
British Columbia[3]	1959	..	..	..
	1960	..	..	..
Canada[4]	**1959**	**45,451**	**123,080**	**41,478,206**
	1960	**49,937**	**135,779**	**44,884,971**

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[1] Approximate.

[2] Approximate. Caseload transferred to the social assistance program.

[3] Caseload transferred to social assistance; no separate figures are available.

[4] Exclusive of British Columbia.

9.—Maximum Monthly Rates under Provincial Mothers' Allowances Programs, July 1960

Province	Mother and One Child	Each Additional Child	Disabled Father at Home	Family Maximum	Supplementary
Nfld......	Food: $35 or $37 depending on age of child. Clothing: $5 for each person. Rent: up to $20 monthly in rural and to $30 monthly in urban areas. Fuel: up to $10.	Food: $10 for each child under age 16: $12 for each child age 16 or over. Clothing: $5.	$20	None set.	In special circumstances up to $30 a month additional if necessary for proper support of family.
P.E.I......	$45	$5	No additional allowance granted.	$75	None granted.
N.S.......	No set maximum; rates are based on average family income for community in which family lives. $40	$5	Included in budget on which allowance is based.	$90	None granted.
N.B.......	$35	$10	No additional allowance granted.	$90	Director may grant an additional $10 for rent if circumstances require it, but only if allowance paid is below maximum.
Que.......	$60	$10	$10	None set (minimum granted $5).	A supplementary allowance of $5 may be paid to a beneficiary incapable of working. Where need exists a special monthly allowance may be paid under the Quebec Public Charities Act through the municipality or a social agency. The cost is met in large part by the province, with some contribution by the municipality.

Ont.......	$120 for mother or father and one child. $30 for one child living with foster mother.	$16 for 2nd child $14 for 3rd child $12 for 4th child $10 for 5th child $8 for 6th child. $25 for 2nd foster child $15 for each additional foster child.	Included in budget on which allowance is based.	$180	An increase in food allowance may be granted on medical recommendation. A fuel allowance of up to $24 a month may be granted from Sept. 1 to Mar. 31. An increase of 20 p.c. in fuel allowance may be granted under special circumstances.
Man.......	Food, Clothing and Personal Needs: $52–$64 depending on age of child. Shelter: rent to $55, or taxes, insurance and minor repairs up to $20, principal and interest on mortgage or agreement for sale up to $55 less taxes. Utilities: up to $7.	$14 for child up to 3 years $16 for child 4–6 years $21 for child 7–11 years $26 for child 12–18 years (subject to deductions for 4th and each additional child).	$25	None set.	$10 for rent if necessary. Housekeeper service as required. Fuel allowance for eight months. For special needs not covered by basic schedule items, up to $150 a year.
Sask......	$60 $35 for one child living with a guardian.	$10 $20 for each child living with guardian.	$20 Also if confined to a nursing home or sanatorium.	$150 $170 if disabled father at home, in nursing home or sanatorium.	The local municipality may grant supplementary aid under the Social Assistance program. In unorganized territories the province assumes full cost.
Alta.......	$70	$20 for 2nd and 3rd child $15 for 4th to 6th child $10 for 7th to 9th child.	Not applicable.	$185	Municipalities of residence may grant additional aid, 80 p.c. of the cost of which is reimbursed by the province; in unorganized territories the province assumes full cost.
B.C.......	Allowances to needy mothers provided with other types of allowance under the Social Assistance Act, and not separable.		...	...	...

Subsection 2.—Provincial and Local Welfare Services

General assistance or relief and the various welfare services associated with this form of aid, as well as the care of the aged and the protection and care of neglected and dependent children, are governed by provincial welfare legislation. Administrative and financial responsibility is shared by the province and its municipalities. Provincial administration of welfare, as of other provincial assistance, is carried out through the department of public welfare or of health and welfare in each province. Several provincial welfare departments have established regional offices for administrative purposes and to provide consultative services to the municipalities.

Significant changes have taken place in provincial programs in the past few years. New or revised legislation or new procedures in a number of provinces have laid the foundation for improved standards of service and administration, and re-appraisal of services is continuing.

Notable program changes in the field of general assistance or residual aid have been accompanied in several provinces by redistribution of costs between the province and the municipalities, and progress has been made in setting up minimum standards of administration and encouraging uniform rates of assistance throughout the province. The financial contribution of the Federal Government to the provinces for unemployment assistance (see p. 276) has doubtless been an important contributing factor in the re-alignment of provincial-municipal responsibilities.

All provinces are giving some consideration to the need for integrated planning on behalf of older citizens. A number have increased their capital or maintenance grants to municipalities and to voluntary groups for homes for the aged and are also assisting in the construction of low-rental housing projects.

The main efforts in child welfare have been directed toward improvement of standards and greater flexibility of services, with particular emphasis on preventive casework services for children in their own homes, development of specialized children's institutions and the finding of adoption homes for all children in need of them.

An impressive number of voluntary agencies also contribute to community welfare including the welfare of families and children and of groups with special needs, such as the aged, recent immigrants, youth groups, and released prisoners. Family welfare agencies or combined family and child welfare agencies in urban centres, for example, offer casework services to families in need of counselling on such problems as marital relations, parent-child relations and family budgeting. Counselling and recreational services for older or retired people are being developed by many agencies and child and youth organizations with recreational and character-building programs offer group participation in physical education, camping, the development of special skills and other opportunities for healthful activity. Welfare councils and community planning councils contribute to the planning and co-ordinating of local welfare services.

Local voluntary agencies and institutions are usually incorporated under provincial law. They may receive public grants, depending on the nature and standard of the services they render, although, with the exception of the semi-public children's aid societies, their main support may be from united funds or community chests, or from sponsoring organizations.

Welfare services, public and private, are hampered by the continued shortage of qualified social workers. Short university courses in social work, periodic study institutes, and a more formal approach than in the past to in-service training are being developed to improve staff qualifications. A number of provincial departments are granting education leave with pay or bursaries to enable selected staff to attend schools of social work.

General Assistance.—All provinces make legislative provision for general assistance on a means-test basis to needy persons and their dependants who cannot qualify for other forms of aid, and some provinces include those whose benefits under other programs are not adequate. This assistance, with some exceptions, is administered by the municipality with substantial financial support from the province. In most provinces assistance is given for food, clothing, shelter and utilities, but it may also include incapacitation or rehabilitation allowances, post-sanatorium allowances, maintenance costs of boarding or nursing-home care, counselling and homemaking services.

The provincial departments of public welfare have regulatory powers over municipal administration of general assistance. Several provinces recommend rates of assistance as a guide to municipalities, and some specify rates at which payments must be paid if a municipality is to qualify for provincial reimbursement. Specified standards of administration may also be a requirement. The province may take the responsibility for aid in unorganized areas and for the cost of aid to certain categories of persons, such as transients. With the introduction of reimbursement plans designed to equalize municipal responsibility, British Columbia and Saskatchewan abolished municipal residence requirements. In 1960, Quebec also abolished municipal residence requirements with the reorganization of the assistance program. In other provinces, the residence of the applicant, as defined by statute, determines the financially responsible authority. Under the Unemployment Assistance Act, all provinces have agreed that residence shall not be a condition of assistance for applicants who come from other provinces. For persons without the required length of residence (usually one year) in a province, aid may be given by the province or the municipality, for which a chargeback may or may not be made to the municipality of residence.

Various financial arrangements are in effect for sharing the costs of general assistance between the province and the municipality. In Newfoundland, such assistance is the responsibility of the province and is administered by the Department of Public Welfare. In Prince Edward Island, the Department of Welfare and Labour provides direct social assistance in rural areas and assumes 75 p.c. of the cost of assistance granted by the City of Charlottetown and the incorporated towns and villages. The Department also operates a province-wide program of financial aid to families where the breadwinner is suffering from tuberculosis and is unable to support the family. In Nova Scotia, social assistance is administered by the municipality, which receives reimbursement from the Department of Public Welfare for two-thirds of the cost of assistance given and one-half of the cost of administration.

In New Brunswick, the administration of assistance to needy persons was completely reorganized under the Social Assistance Act, 1960. This Act enables the province for the first time to share with the municipalities the costs of the general assistance program. The province reimburses each municipality to the extent of one dollar per capita of the population plus 70 p.c. of expenditures in excess of that amount, and also pays 50 p.c. of the cost of administration.

In Quebec, the program of general assistance was revised through an amendment to the Quebec Public Charities Act, effective Jan. 1, 1960. The province reimburses municipal departments or authorized agencies for the full cost of aid to persons in their own homes and administers aid to persons who are unfit for work for at least 12 months. The cost of aid to unemployable persons in homes for special care, including nursing homes, is borne two-thirds by the province and one-third by the institution.

In Ontario, the Department of Public Welfare reimburses municipalities, up to a prescribed maximum, for 80 p.c. of their expenditures on aid to needy persons and on incapacitation allowances for single needy handicapped residents.

The Social Allowance Act of Manitoba, passed in 1959, transferred from the municipalities to the province responsibility for administering and financing aid to mentally or physically incapacitated persons whose disability is likely to last more than 90 days, and to persons unable to work because of their age. Aid to other needy persons, termed 'indigent relief', remains under the municipalities. The Department of Health and Public Welfare reimburses the municipalities to the extent of 40 p.c. of the costs, or at a higher rate if costs exceed a specified amount. In Saskatchewan, through the Department of Social Welfare and Rehabilitation, the province bears approximately 93 p.c. of the cost of assistance granted by the municipalities to needy persons. The municipalities are assessed annually on a per capita basis for about 7 p.c. of the over-all cost of social aid, and the province reimburses each municipality for all actual expenditures. In Alberta, the province reimburses the municipalities for 80 p.c. of the value of the assistance given. The Department of Public Welfare maintains two hostels and one welfare centre to care for unemployable single homeless men without municipal domicile.

The Province of British Columbia, through the Department of Social Welfare, reimburses the municipalities on a pooled basis for 90 p.c. of the total cost of social assistance to needy persons. Also, the province shares equally with the municipalities expenditures on salaries of social workers; a municipality with fewer than 15,000 persons may arrange to have the Department undertake social work within the municipality and reimburse the Department at the rate of 30 cents per capita per year.

Care of the Aged.—Homes for the aged under provincial, municipal or voluntary auspices are provided for the aged and infirm in all provinces. Voluntary homes generally are provincially inspected in accordance with prescribed standards and in some provinces must be licensed. Most provinces contribute to the maintenance of elderly persons in homes for the aged, either through general assistance or through statutes which relate particularly to these homes. Also, as previously indicated, 50 p.c. of the payments on behalf of assistance cases in homes for the aged and infirm (homes for special care) are met by the Federal Government.

Several provinces make capital grants toward the construction of homes, and in four provinces capital grants are also available to municipalities, voluntary organizations, or limited-dividend companies for the construction of low-rental housing.

Newfoundland maintains a Home for the Aged and Infirm at St. John's and also pays, in whole or in part, the cost of maintaining needy old people in homes for the aged and boarding homes. In 1955, a grant of 20 p.c. of costs, to be paid over a ten-year period, was made to a religious organization for the construction of a home, and provision is made for grants to similar projects under other auspices. The province is authorized by the Senior Citizens (Housing) Act, 1960 to guarantee the repayment of loans made under the National Housing Act to limited-dividend companies constructing hostels or housing for the elderly. Payment of the cost of operating hostels or housing projects may also be guaranteed. The aged and infirm in Prince Edward Island are cared for in two institutions operated by the Department of Welfare and Labour. In Nova Scotia, the aged are cared for in municipal or county homes, in homes operated by religious or private organizations and in private boarding homes. The province reimburses the municipalities for two-thirds of their expenditures for the maintenance of needy persons in municipal homes, subject to compliance with specified standards of care and accommodation. Homes for the aged receiving aid from the provincial government are subject to provincial inspection. Homes for the aged in New Brunswick are operated under municipal, religious, fraternal and private auspices, and receive no direct financial support from the province. Voluntary and proprietary homes are subject to provincial licensing and inspection and must meet standards contained in regulations under the Health Act. Under the Social Assistance Act, 1960, the province for the first time contributes to the maintenance of needy persons in municipal homes.

Institutional care for indigent old people in Quebec is provided through charitable institutions under the Public Charities Act. The Homes for the Aged Act authorizes the province to erect and maintain homes for the aged and housing projects, or to make grants to voluntary organizations for this purpose. Standards in homes are governed by regulations under the Public Health Act.

Under the Ontario Homes for the Aged Act, municipalities must provide institutional or boarding-home care for the aged. The province contributes 50 p.c. of the costs of constructing approved homes and 70 p.c. of their net operating and maintenance costs.

It also pays up to 70 p.c. of the costs of maintenance in approved boarding homes. Homes for the aged under voluntary auspices are approved, inspected and assisted under the Charitable Institutions Act, which provides for grants in aid of construction equalling 50 p.c. of costs up to $2,500 per bed and maintenance grants of 75 p.c. of the amount spent by the organization up to $3.40 per day for each resident. The Elderly Persons Housing Aid Act provides for grants to limited-dividend housing corporations building low-rental housing for elderly persons.

Institutions and boarding homes for the aged and infirm in Manitoba are supervised and licensed by the Department of Health and Public Welfare under public health legislation. Under the Elderly Persons Housing Act, the province makes construction grants to municipalities and charitable organizations, equalling one-third of the costs of constructing or acquiring and renovating housing accommodation and homes for the aged. Grants may not exceed $1,400 and $1,667 for one-person and two-person housing units, respectively; $1,200 per bed for new homes for the aged; and $700 per bed for homes that have been renovated. Under the Social Allowances Act, 1959, the entire cost of assistance to those who, because of age or incapacity, require care by another or in a home for the aged for more than 90 days is borne by the province.

Aged and infirm persons in Saskatchewan are cared for in four provincial nursing homes and in voluntary homes for the aged. The latter are inspected and licensed under the Housing Act. This Act also empowers the province and municipalities to subscribe to the stock of limited-dividend housing companies building low-rental accommodation for older persons; the province may also make loans to municipalities to assist them in subscribing. Capital grants amounting to 20 p.c. of construction costs and maintenance grants equalling $40 per bed per year may be made to municipalities, churches or charitable organizations sponsoring approved homes or housing projects. Costs of maintaining needy persons in homes for the aged are shared by the province and the municipalities under the Social Assistance Act.

Under what are termed 'master agreements', the Province of Alberta bears the cost of constructing and equipping homes for the aged and housing units on municipal land. Projects are operated by provincially incorporated foundations which include municipal councilmen in their membership; net costs of operation are borne by the municipalities. The province also meets up to 80 p.c. of the cost incurred by municipalities for the maintenance of elderly persons in housing projects and municipal or private homes. Private homes are municipally licensed.

British Columbia operates the Provincial Home for Elderly Homeless Men, the Provincial Infirmary for the chronically ill and, for senile and psychotic patients, three provincial homes for the aged. It also licenses and supervises homes for the aged and boarding homes and, where necessary, shares with the municipalities on a 90-10 basis the cost of maintaining needy residents. Under the Elderly Persons Housing Aid Act, the province makes grants amounting to one-third of construction costs to municipalities and non-profit corporations, including religious and service organizations, engaged in building homes or low-rental housing units for elderly citizens.

Child Care and Protection.—Child welfare services, which include child protection and care, services for unmarried parents, and adoption services, are provided in all provinces under provincial legislation and are administered by some central authority, usually a division of child welfare within the department of welfare. Except in Quebec, where the province does not administer services directly, the program may be administered by the provincial authority itself or the responsibility may be delegated under provincial child welfare Acts to local children's aid societies, that is, to voluntary agencies with boards of directors, operating under charter and under the general supervision of provincial departments. In Quebec, child welfare services are administered by recognized voluntary agencies and institutions, religious and secular. In Newfoundland, Prince Edward Island, Saskatchewan and to a large extent in Alberta, they are administered by the province; in the larger urban centres of Alberta there is some delegation of authority to the municipality. In Ontario and New Brunswick, a network of local children's aid societies, operating under statutory authority, is responsible for the services. In Nova Scotia, Manitoba and British Columbia, services are administered by local children's aid societies in the heavily populated areas and by the province in other areas.

Children's aid societies and the recognized agencies in Quebec receive substantial provincial grants and sometimes municipal grants and in many areas they also receive support from private subscriptions or from community chests or united funds. Maintenance costs for children in care of a voluntary or public agency may be borne entirely by the province—as in Alberta, Manitoba, Prince Edward Island and Newfoundland—or partly by the municipality of residence and partly by the province.

The child welfare agencies, whether provincial offices or authorized private agencies, have the authority to investigate cases of alleged neglect and, if necessary, to apprehend a child and to bring the case before a judge upon whom rests the responsibility of deciding whether in fact the child is neglected. When neglect is proved, the court may direct that the child be returned to his parent or parents, under supervision, or be made a ward of the province or a children's aid society or, in Quebec, be placed under the authority of a suitable person or agency. The appropriate agency is then responsible for making arrangements to meet the needs of the child in so far as community resources permit. The services may involve casework with families in their own homes, or care may be provided in foster boarding homes, in adoption homes or, for children who need this form of care, in selected institutions. Children placed for adoption may be wards or they may be placed on the written consent of the parent. Special efforts, which are meeting with considerable success, are being made to find suitable homes for children found difficult to place for adoption because of age, disability or ethnic differences. Adoptions, including those arranged privately, number about 11,000 annually.

Child welfare agencies make use of the small selective institution for placement of children who are forced to be away from their own homes for a short period or who may need preparation for placement in foster homes, and also for teen-age children who may find it easier to fit into a group setting than into a foster home. A growing number of institutions are meeting this demand for special care by a reduction in size or reorganization into small units and by the introduction of training courses for staff and other measures for the improvement of standards. The development of small, highly specialized institutions, which function as treatment centres for emotionally disturbed children, has been of particular significance in recent years.

Institutions for children are governed by provincial child welfare legislation or by special statutes dealing with welfare institutions, and by provincial or municipal public health regulations. The institutions are generally subject to inspection and in some provinces to licensing, and are usually required to make reports to the province on the movement of children under their care. Sources of income may include private subscription, provincial grants, and maintenance payments on behalf of children in care, payable by the parents, the placing agency, or the responsible municipal or provincial department.

Services to unmarried parents include casework services to the mother and possibly to the father, legal assistance in obtaining support for the child from the father, and foster-home care or adoption services for the child. If necessary, support for unmarried mothers may be obtained under general assistance programs. In many centres, homes for unmarried mothers are operated under private or religious auspices.

Except in Ontario, day nurseries for the children of working mothers have been established only in the larger centres; these are under voluntary auspices and in four provinces subject to licensing. In Ontario, where municipal day nurseries have been established in most of the industrial centres, a Day Nurseries Act sets out standards for operation and licensing to be met by all agencies offering day-care services. It also provides for reimbursement of one-half of the operating and maintenance costs of municipal day nurseries.

Subsection 3.—Workmen's Compensation

In all ten provinces, legislation is in force providing for compensation for injury to a workman by accident arising out of and in the course of employment or by a specified industrial disease. A summary of provincial workmen's compensation legislation is given in Chapter XVI.

PART III.—NATIONAL VOLUNTARY HEALTH AND WELFARE ACTIVITIES

A number of national voluntary agencies carry on important work in the provision of health and welfare services, planning research and education. These agencies, some of which are described below, supplement the services of the federal and provincial authorities in many fields and play a leading role in stimulating public awareness of health and welfare needs and in promoting action to meet them.

The Canadian Welfare Council.—The Council, established in 1920, is a national voluntary association of organizations and individual citizens whose aim is to further the advancement of social welfare in Canada. Member organizations include community funds and councils, other private social agencies, various federal, provincial and municipal departments, and citizen groups and individuals active in the fields of health, welfare and recreation. It furnishes authoritative information, technical consultation and field service in the main areas of social welfare and provides a means of co-operative planning and action by public and private agencies.

The policies and programs of the Council are determined by its members under the leadership of a nationally representative board of governors. Aided by professional staff, the members work together through Divisions of Family and Child Welfare, Public Welfare, Corrections, and Recreation and Community Funds and Councils, and through special committees on such subjects as social security welfare of immigrants and the aging. Departments of the Council include the Information and Research Branches and French Speaking Services. The Council publishes periodicals entitled *Canadian Welfare* and *Bien-Être Social Canadien*, and the Canadian Journal of Corrections, a directory of Canadian welfare services, pamphlets, and division bulletins.

The Canadian Diabetic Association.—Formed in 1953 with headquarters in Toronto, the Association has 22 branches in various parts of the country and a French-language affiliate, Association du Diabète, in Quebec. The aims of the organization are to promote public education regarding diabetes, to detect unrecognized cases, to teach diabetics self-care and to conduct research. The branches support various services such as free diet counselling, summer camps for diabetic children and adults, and hold 'model schools' or institutes from time to time in many cities.

The Canadian Red Cross Society.—Established in 1896 in Canada, the Society is affiliated with the International Red Cross and has branches in all ten provinces with a national headquarters in Toronto. Its objectives, defined in its Charter, are "...in time of peace or war to carry on and assist in work for the improvement of health, the prevention of disease and the mitigation of suffering throughout the world". Red Cross Society activities are very broad, ranging from national and international disaster relief services to the support of local projects. One of the major activities in Canada is the operation of a national blood transfusion service, which includes collecting and supplying free of charge, for hospital use, blood provided by voluntary donors. The Society also maintains outpost hospitals, nursing stations and emergency units in several provinces and provides an arts and crafts program and other welfare services in veterans hospitals. The Junior

Red Cross promotes health education through its schoolroom branches across Canada; it supports a special fund to supply treatment to indigent handicapped children in Canada and a fund to promote understanding among school children of different countries.

The Canadian Foundation for Poliomyelitis and Rehabilitation.—The Foundation was formed in 1948 to assist poliomyelitis victims but in 1958, because of the protection afforded by the Salk vaccine, it broadened its scope to initiate projects for the rehabilitation of persons disabled by other diseases. Through the chapters organized in ten provinces the expanded program, financed mainly by the March of Dimes, supports treatment facilities in hospitals and rehabilitation centres and provides direct services to disabled persons in need of treatment, training, and other personal aid. Other aims of the Foundation are to carry out public education and research concerning disabling conditions and to assist in the training of professional personnel. Recent projects have included the organization of anti-polio vaccination clinics, transport of iron lungs and the formation of iron lung pools, and case-finding surveys in various provinces. The national office is in Montreal.

Victorian Order of Nurses.—Since its inception in 1897, the Victorian Order of Nurses has provided a professional home nursing and health counselling service to patients with any type of illness and regardless of their financial status. In all provinces except Prince Edward Island, the association's nurses carry out bedside nursing, prenatal, post-natal and newborn care under medical direction with emphasis upon chronic conditions. In some provinces they also assist provincial health authorities in tuberculosis and venereal disease programs and conduct child health clinics. In 1960 the Order employed 654 nurses in 119 branches whose services are available to over one-third of Canada's population. The national office is in Ottawa.

The Canadian National Institute for the Blind.—Since 1918 the Canadian National Institute for the Blind has been the only national agency providing a complete social welfare service to the blind and prevention services to the visually impaired. The national office, located in Toronto, supports the seven regional divisions covering all provinces and the 48 local branches serving 23,802 registered blind persons and 76,575 prevention cases in 1960. Through its Eye Services, free to those in need of assistance, the Institute arranges for eye examinations and pays for medical treatment, glasses and visual aids; it also supports the operation of several Low Vision Aid Clinics and seven Eye Banks in the main cities. Social, vocational, recreational, and educational services for the blind are provided at 19 service centres to which workshops and residences are attached. Home teachers visit the newly blinded of all ages including pre-school-age children to teach them independence in daily living and other skills such as Braille, typing and handicrafts. Placement officers furnish vocational counselling and arrange for training and employment. Where possible the blind are placed in jobs in general industry, in the 425 CNIB concession stands and canteens or in farming and small businesses; others are gainfully employed in the Institute's industrial and sheltered workshops. The National Library circulates Braille magazines, books and recordings and supplies a transcription service to students.

The Health League of Canada.—The Health League of Canada, first established in 1918 as a National Committee for Combating Venereal Disease, now embraces about 75 national member associations supporting a wide variety of public health education activities to prevent disease and raise health standards. Its standing committees are concerned with various aspects of public health such as immunization, milk pasteurization, fluoridation of water, industrial health, nutrition, gerontology and other fields. The program is administered from a national office in Toronto, usually working through the affiliated organizations. Educational efforts include the provision of speakers for meetings and the preparation of radio scripts, health education films and literature; a magazine "Health" is published bi-monthly and weekly news bulletins are released to the press. The League also sponsors National Health and National Immunization Weeks.

St. John Ambulance Association.—The Order of the Hospital of St. John of Jerusalem began as a local unit in Montreal in 1884 and was incorporated on a national basis in 1910. The organization is composed of two parts—the St. John Ambulance Association and the St. John Ambulance Brigade. The first is devoted to teaching first aid and home nursing, used extensively by Civil Defence, Armed Forces, workmen's compensation and industrial personnel, and the latter to directing the emergency corps of trained personnel. The Brigade maintains first aid posts at large public gatherings and operates ambulance services in several provinces. Headquarters of the Association is in Ottawa, with provincial divisions in nine provinces controlling their own programs and financing the operation of their local branches.

The Canadian Tuberculosis Association.—Founded in 1900 to increase treatment facilities for tuberculosis patients, the Association's objective is the control and ultimate eradication of tuberculosis. The national office in Ottawa along with the ten provincial associations and 175 local branches co-operate with the public health agencies in promoting adequate facilities for prevention, diagnosis, treatment and rehabilitation. The provincial associations assist in case-finding by means of mass X-ray and tuberculin testing surveys of specific areas and groups, and carry out extensive health education work; most associations also participate in follow-up and rehabilitation of ex-patients. Publication of educational materials and periodicals and organization of the annual Christmas Seal campaign, the principal source of funds, is centred in the national office, which makes its consultant services available to federal and provincial health departments.

The National Cancer Institute of Canada.—The National Cancer Institute, composed of persons representing professional societies and agencies concerned with cancer research and therapy, was founded in 1947 to develop a nationally co-ordinated research and professional education program. The Institute promotes fundamental research through selected projects in universities, hospitals and research centres, maintains a Canadian Tumour Registry, provides training fellowships and, in co-operation with the Canadian Medical Association and medical schools, promotes professional education on cancer topics. The Institute receives support from federal and provincial grants and from the Canadian Cancer Society; research work on lung cancer is being supported by the Canadian tobacco industry.

The Canadian Hearing Society.—Organized in Toronto in 1940 as the National Society of the Deaf and the Hard of Hearing, the Society operates chiefly in Toronto and the surrounding area. It is concerned with the preservation of hearing, the treatment of deafness and the provision of rehabilitation services for those with impaired hearing, including war veterans and children. It provides otological examinations, counselling, vocational guidance and job placement services for the deaf or hard-of-hearing, and hearing aids to indigent persons.

The Canadian Mental Health Association.—Since its organization in 1918 as the National Committee for Mental Hygiene, the Association has initiated numerous measures to promote mental health and the best possible care of the mentally ill. Its program of public education, professional and lay training, services to the mentally ill, consultative services and research is carried out by the national office in Toronto, nine provincial divisions and 91 community branches. To develop public understanding of mental health principles the Association sponsors discussion groups and prepares a variety of educational materials including films for the press, radio, and TV, and for professional personnel. Services to mental patients have grown rapidly as branches have established information and referral centres in 36 communities, volunteer hospital visiting programs, White Cross rehabilitation centres and other personal services to patients and their families. Through various studies of mental health problems and the National Mental Health Research Fund, set up in 1957, the Association has stimulated new approaches to prevention and treatment in this field.

The Canadian Cancer Society.—Organized in 1938 to co-ordinate voluntary activities and disseminate knowledge in the cancer field, the Canadian Cancer Society operates in all provinces and has its national office in Toronto. Its services include a public education program, welfare services such as transportation, home nursing and cancer dressings to needy persons, and fellowships to medical graduates for advanced study in cancer. Voluntary subscriptions to the Society provide the major source of funds for the basic research program of the National Cancer Institute of Canada. The Society also sponsors clinical research projects and supports the establishment of new research facilities.

National Heart Foundation of Canada.—The Canadian Heart Foundation, formed in 1947 by physicians to co-ordinate research and disseminate information, was replaced by the National Heart Foundation of Canada in 1956. Its membership consists of lay and medical individuals and organizations interested in promoting research on cardiovascular diseases and in both public and professional education. Medical research projects are financed by voluntary donations to the National Heart Fund as well as by federal and provincial grants. The Foundation's national office is in Toronto; provincial divisions have been established in eight provinces.

The Canadian Paraplegic Association.—The Association was formed in 1945 by a group of paraplegic veterans to ensure provision of adequate treatment and rehabilitation facilities for all persons suffering paralysis caused by disease or injury. Through its national office in Toronto and five regional divisions, the Association's program covers medical and vocational services, prosthetic appliances and personal aids and other activities to promote the social well-being of paraplegics. A comprehensive rehabilitation service is provided at Lyndhurst Lodge Retraining Centre in Toronto, owned by the Association, and other care by arrangement with a number of general and veterans hospitals and rehabilitation centres. The Association, in turn, furnishes special services to veterans and workmen's compensation cases on a repayment basis.

The Canadian Council for Crippled Children and Adults.—The Council was established in 1937 to co-ordinate and support activities for the care and rehabilitation of physically handicapped children. The first provincial organization was formed in Ontario in 1922 and similar organizations, which have remained autonomous, now exist in all provinces. In 1954 the scope of the Council's interests was broadened to include the adult handicapped and, with the establishing of a national office in Toronto headed by an executive director of the Council, has since sponsored various projects in the areas of prevention, research and public education. Programs in the provinces vary, ranging from case-finding, establishment of cerebral palsy clinics and children's rehabilitation centres and operation of summer camps to payment for treatment services, prosthetics and other services. In most provinces, service clubs raise funds to support the work of the organization, particularly through the sale of Easter Seals.

The Canadian Arthritis and Rheumatism Society.—Established in 1948 to promote research, professional education and treatment services in the field of rheumatism and arthritis and to disseminate factual information, the Society has branches operating in all provinces except Prince Edward Island and Newfoundland; its national office is in Toronto. Medical advisory boards in each of the eight provinces and one at the national level give advice and guidance to the provincial and national directors. The Society sponsors an educational program both for the general public and for physicians and maintains out-patient clinics in general hospitals for the treatment of low-income patients. Its branches have pioneered in the operation of mobile physiotherapy units, now numbering 75, bring treatment to home-bound patients and in four provinces support a mobile consultative service. All divisions have liaison with employment agencies and vocational training schemes. Services are usually free or for a nominal amount. The national body promotes research projects in various universities and institutions and provides clinical fellowships to physicians in all parts of Canada.

Multiple Sclerosis Society of Canada.—The Society has been organized since 1948 to support research in multiple sclerosis and allied diseases and to educate the public on the social problem of multiple sclerosis. Its 20 local chapters located in eight provinces raise funds mainly for research but they also provide welfare services to patients in need of wheel chairs and other personal aids. Grants for eight research projects and fellowships, administered from the national office in Montreal, amounted to over $46,000 in 1960.

The Canadian Association for Retarded Children.—The Association was incorporated in 1958 to assist and give co-ordinated direction to the work of a growing number of organizations for the mentally retarded, now represented by 10 provincial and some 175 local groups. Membership of the locals exceeds 11,000, most of whom are parents of mentally retarded children. The Association promotes the establishment of clinics, day schools, institutions, workshops, and recreational programs; it also supports and encourages research into the causes of mental deficiency. Increasing numbers of day classes offer training opportunities within the community for mentally retarded children who are not acceptable for regular school instruction. Financial support comes from local fund-raising campaigns, community chests and, in varying degrees, from provincial departments of education. A national office was opened in Toronto in 1959.

The Muscular Dystrophy Association of Canada.—This Association was organized in 1954 to stimulate and unify research efforts into the cause, nature and treatment of muscular dystrophy and related diseases and to promote the establishment of facilities for diagnostic, consultative and treatment services. Under the direction of a national office in Toronto supported by 19 local chapters, its chief activity is the support of basic and applied research projects in medical schools and other centres across the country. In addition to raising funds for research projects, local chapters provide various patient services including personal aids, appliances and transportation.

PART IV.—VETERANS SERVICES*

The Department of Veterans Affairs administers most of the legislation making up the Veterans Charter and provides administration facilities for the Canadian Pension Commission which administers the Pension Act and the Civilian War Pensions and Allowances Act; for the War Veterans Allowance Board which is responsible for the administration of the War Veterans Allowance Act; and for the Secretary-General (Canada) of the Commonwealth War Graves Commission.

The main benefits now provided to veterans consist of medical treatment for those eligible to receive it, land settlement and home construction assistance, educational assistance for children of the war dead, veterans insurance, general welfare services, unused re-establishment credit, disability and widows' pensions, and war veterans allowances.

The work of the Department, excepting the administration of the Veterans' Land Act, is carried out through 17 district offices and five sub-district offices in Canada and one district office in England. There are eight Veterans' Land Act district offices and 32 regional offices established to administer the benefits of the Act.

Section 1.—Medical, Dental and Prosthetic Services

Medical Services.—The Department of Veterans Affairs, through its Treatment Services Branch, provides medical services for entitled veterans throughout Canada. Service is also provided for members of the Armed Forces, the Royal Canadian Mounted Police, and the wards of other governments or departments at the request and expense of the authorities concerned.

The primary responsibility of the Branch is to provide examination and treatment to disability pensioners for their pensionable disabilities. Other main groups of veterans receiving treatment are War Veterans Allowance recipients, veterans whose service and need make them eligible for domiciliary care, and veterans whose service and financial circumstances render them eligible for free treatment, or at a cost adjusted to their ability to pay. If beds are available, any veteran may receive treatment in a departmental hospital on a guarantee of payment of the cost of treatment. The pensioner receives treatment regardless of his place of residence, but service to other veterans is available in Canada only.

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* Prepared by the Department of Veterans Affairs, Ottawa.

Treatment is provided in eleven active treatment hospitals located at Halifax, N.S., Lancaster, N.B., Quebec City, Montreal, and Ste. Anne de Bellevue in Quebec, Toronto and London in Ontario, Winnipeg, Man., Calgary, Alta., and Vancouver and Victoria, B.C.; also in two convalescent centres and two homes maintained for the provision of domiciliary care. The rated capacity of these institutions at Dec. 31, 1960 was 8,970 beds. An additional 584 beds were available in veterans pavilions situated at Ottawa, Regina and Edmonton. Pavilions are owned by the Department but are operated by the parent hospital, and medical staff is provided by the Department. Where departmental facilities are not available, the eligible veteran may receive treatment at the expense of the Department in an outside hospital by a doctor of his own choice. Professional staffs of active treatment hospitals are employed on a part-time basis; in the main they are recommended for appointment by the Deans of Medicine of the universities with which the hospitals are affiliated. Most members of the medical staff are engaged in teaching and private practice, and hold appointments on the medical faculties of the various universities.

In its active treatment institutions, the Department maintains research and medical teaching programs which are considered essential to attract highly qualified professional men and thus ensure the highest quality of medical care. All active treatment hospitals have been approved by the Royal College of Physicians and Surgeons of Canada for postgraduate teaching in medicine and surgery, and the majority are approved also for advanced postgraduate training in the various specialties. An intern-resident program is in effect and, at the end of 1960, 278 residents and interns were in training, together with 144 interns in occupational therapy, physiotherapy, psychology, laboratory, and medical social services. During the year, there were 87 projects in progress in the Clinical Research Program. The program is varied but in the main deals with conditions affecting aging, which the Department is in a special position to investigate. Self-contained Clinical Investigation Units have been set up in active treatment hospitals located at Montreal, Toronto, London, Winnipeg and Vancouver.

During 1960, 36 departmental employees attended courses, assisted fully or partly by the research and education vote. In addition, nursing assistants were trained at a school located at Camp Hill Hospital in Halifax. This school has an annual capacity of 70 graduates who are offered employment in departmental hospitals across the country.

Departmental hospitals provide base-hospital facilities for the treatment of members of the Armed Forces. Ste. Foy Hospital near Quebec City and Sunnybrook Hospital at Toronto have self-contained units but in the other institutions there is a close integration of patients. The units, which are staffed by Armed Forces personnel, utilize the ancillary services of the hospital and also provide training facilities for members of the medical services of the Armed Forces.

Progress continues to be made toward the provision of a nation-wide chain of modern fire-resistant institutions through replacement of obsolete accommodation. Patient-load for the year ended Dec. 31, 1960 was as follows:—

Item	*No.*
Admissions to departmental hospitals	51,787
Admissions to other hospitals	17,563
Admissions to out-patient strength	6,113
TOTAL ADMISSIONS	75,463
Patient-days in departmental hospitals	2,643,639
Patient-days in other hospitals	870,446
TOTAL PATIENT-DAYS	3,514,085

Under the federal-provincial hospital insurance program, DVA hospitals are recognized for the provision of insured services to veterans. Arrangements have been made for the payment of any necessary premiums on behalf of veterans who are in receipt of War Veterans Allowances. The Veterans Treatment Regulations remain the authority for the treatment of veterans (and others) in DVA institutions and elsewhere under departmental responsibility, regardless of whether or not the hospitalization is at the expense of the insurance plan.

Dental Services.—Dental treatment is provided for pensioned veterans, War Veterans Allowance recipients and others who are eligible for treatment under the various sections of the Veterans Treatment Regulations. Treatment is also provided for the Royal Canadian Mounted Police and other government departments on a recoverable basis. Thirty-five full-time and one half-time dental officers, together with ancillary staff, are employed in 20 dental clinics located in departmental hospitals and treatment centres across Canada.

The total dental treatment provided under departmental auspices in 1960 consisted of 120,793 operations for a total of 19,554 patients. Approximately 80 p.c. of such treatment was provided in departmental clinics and the remainder by civilian dentists in those areas where departmental facilities were not available.

Prosthetic Services.—The Prosthetic Services Section of the Department is responsible for the supply and maintenance of prostheses, orthopaedic appliances, and sensory aid devices to veterans and other persons eligible for treatment under Veterans Treatment Regulations. These appliances are issued only upon departmental medical prescription and are supplied and serviced without charge to eligible patients. The Department also extends prosthetic service upon request and, on a repayment basis, to other Federal Government departments, to allied governments, to provincial governments under certain conditions, and to workmen's compensation boards.

The physical establishment consists of a main factory at Toronto and 12 district manufacturing and fitting centres located in departmental hospitals throughout Canada; service is extended to five sub-districts by district prosthetic technicians. The Toronto factory manufactures certain prostheses, appliances and component parts, provides bulk purchasing of raw materials for distribution to other centres, provides advanced instructional courses for district staff, maintains a research section staffed by engineers and technicians, and accepts, when necessary, referrals of cases for whom routine fitting procedures are considered inadequate.

A considerable variety of appliances and accessories are supplied. In general, the Service manufactures and maintains those appliances which must be made to individual specifications such as arm and leg prostheses, braces and splints of all types, body belts, orthopaedic boots, boot aids, and many miscellaneous appliances medically prescribed for particular needs. Other appliances and accessories such as hearing aids, batteries, wheel chairs, eye glasses, elastic hosiery, rubber heels, stump socks, trusses, etc., are purchased from trade sources.

Research and development of prostheses and appliances had been carried out for many years prior to World War II by the prosthetic technicians at the Toronto Centre, who produced an imposing list of improvements in basic appliances and accessories, sometimes aided by the co-operation of the orthopaedic surgeons. In 1944, Canada made a vital ontribution by organizing, under the auspices of the National Research Council, an nternational Conference on Artificial Limbs which was attended by representatives from he United Kingdom, the United States, the Union of Soviet Socialist Republics, Australia nd Canada. Special committees were subsequently formed in the United Kingdom, the United States and Canada. In 1946, a research engineer was appointed to the National Research Council to work on prostheses and two years later was transferred to the Toronto

Prosthetic Centre as Manager where, in 1949, the importance of research was more adequately recognized by the installation of a research unit staffed by engineers and technicians. The work of the Associate Committee on Artificial Limbs (NCR-Canada) passed to this Unit and the Committee disbanded in 1951.

The utilization of many new materials that became available during and after the War paved the way for various developments and, to some extent, altered manufacturing and fitting techniques. Low-pressure laminates, using fabrics of stockinette, canvas, fibreglas, dacron or nylon together with synthetic resin, and applied with a moulding technique, produced appliance 'shells' having strength, comparative lightness, moisture resistance, permanent basic colouring, and economy of processing. In the manufacture of artificial arms, plastics displaced leather and steel construction almost entirely and to a lesser extent in artificial legs. Plastic artificial eyes similarly replaced glass eyes, as they are impervious to socket acids, easily modified for fitting, and much more durable. Polyviny chloride plastics were used to produce natural-appearing facial restorations, including ears and noses, and also cosmetic gloves for artificial hands. Stainless steel and lightweight steel alloys added strength and reduced weight in limb and brace components.

In 1949, the research unit initiated a particular effort to improve the fitting of hi disarticulation amputations, eventually producing a prosthesis based on a new approac to an old problem. This development, embracing a form-fitting, partly-flexible plasti girdle and new alignment principles, eliminated shoulder suspension, provided more comfort and improved walking ability. It created considerable international interest and i now known as the Canadian Hip Disarticulation Prosthesis. Another notable development was the plastic prosthesis for the Syme's (ankle) amputation which incorporated jointless neoprene rubber foot constructed on an inner 'keel', thereby eliminating a mechanical ankle joint. The new prosthesis also gained international recognition as a Canadia achievement.

Other successful projects included the reactivation of suction socket fittings for above knee amputations in lieu of shoulder harness or pelvic belt suspension, a prosthesis fo wrist-level amputation to preserve natural wrist turning motion, use of laminated plasti as a covering and repair material in lieu of rawhide, stainless steel and aluminum hook for arms instead of plated steel. Kroy-treated wool and rayon-wool stump socks wer added to the all-wool line. A universal ankle brace and a drop-foot lifter with singl medial support, both light and inconspicuous, were also developed as well as a plasti mechanical hand with 'positive' grip and cosmetic glove for natural appearance.

Extension of the plastic shank and jointless neoprene rubber foot components to le prostheses other than the Syme's is now on field test, together with two development under the United States program—the new hydraulically controlled prosthesis for above knee amputations and the patellar tendon bearing prosthesis for below-knee amputation both of which show great promise for early adoption. The newly developed 'quadrilatera socket for above-knee amputations is being issued upon prescription.

In the field of prosthetic research, the Department maintains close touch with researc groups elsewhere, particularly the Committee on Prosthetic Research and Developme NRC-NAS (U.S.A.), and the Standing Advisory Committee on Artificial Limbs, BM and NI (England). A Prosthetic Services Advisory Committee, on which disabled vetera are represented, meets periodically under the chairmanship of the Director General Treatment Services (DVA) to consider new scientific developments and to review metho and policies.

During the year 1960, approximately 157,000 basic appliances, accessories and repai were supplied to 80,000 patients.

Section 2.—Welfare Services

Much of the legislation designed to assist with the rehabilitation of war veterans has expired but the following programs are still of significant importance.

War Service Gratuity.—A cash payment was authorized by the War Services Act, 1944 for each veteran of World War II, the amount varying according to length of service and the theatre in which it was performed. In 1954, under the Veterans Benefit Act, this gratuity was made available to veterans of the Korean operation. Since most of the veterans of World War II had received their benefits under the former Act during the first few years following the end of the War, payments were discontinued after Dec. 31, 1954, except for those with overseas service who, because of unusual circumstances, could not apply before that date. The yearly amounts paid in gratuities up to the end of March 1955 are shown in the 1956 Year Book, p. 306. Those paid subsequently, with cumulative totals to Dec. 31, 1960, are:—

Calendar Year	*World War II Veterans*	*Special Force Veterans*
	$	$
1955	52,201	29,766
1956	13,623	8,712
1957	16,640	1,603
1958	6,296	1,999
1959	9,047	433
1960	4,615	1,985
CUMULATIVE TOTALS TO DEC. 31, 1960	470,041,437	6,694,470

Re-establishment Credit.—This benefit, also authorized by the War Service Grants Act, is equal in each case to the War Service Gratuity less the supplementary gratuity paid for overseas service. It is not given in cash to the veteran, except for balances of $50 or less, but is released on his behalf for specified purposes. World War II veterans have until Sept. 30, 1962, and veterans qualified on the basis of service with the Korean Special Force have 15 years from the date of their discharge from the Special Force to apply for this benefit. At Dec. 30, 1960, unused re-establishment credit balances totalled $13,245,496. The amounts paid during 1959 and 1960, with cumulative totals to Dec. 31, 1960, are shown in Table 1.

1.—Re-establishment Credits Paid, by Required Purpose, 1959 and 1960, with Cumulative Totals

Purpose	Calendar Year 1959	Calendar Year 1960	Cumulative Totals to Dec. 31, 1960
	$	$	$
Homes	**1,307,577**	**1,450,904**	**242,733,794**
Purchased under National Housing Act	5,685	4,696	3,350,411
Purchased other than under National Housing Act	60,154	32,147	32,545,054
Repairs, etc	140,228	191,326	17,091,148
Furniture and equipment	1,077,246	1,188,527	185,183,121
Reduction of mortgage	24,264	34,208	4,564,060
Business	**263,560**	**287,430**	**55,969,538**
Purchase of a business	1,847	699	3,679,413
Working capital	30,553	28,551	25,327,327
Tools and equipment	231,160	258,180	26,962,798
Miscellaneous	**532,773**	**1,218,568**	**12,188,588**
Insurance, annuities, etc	248,266	421,764	9,912,347
Special equipment for training	9,271	10,295	757,471
Clothing	103,574	333,284	642,615
Reimbursements	171,662	453,225	876.155
Totals	**2,103,910**	**2,956,902**	**310,891,920**

Casualty Rehabilitation.—The function of the Casualty Welfare Division is outlined in the 1956 Year Book, p. 307. At Dec. 31, 1960, there were 3,014 active cases The total number of disabled veterans then registered with the Division was 48,239 and of these 45,225 were closed cases. New cases opened during the year ended Dec. 31, 1960 numbered 837 and cases closed numbered 2,494.

2.—Registrations for Casualty Rehabilitation, by Status of Applicant and Type of Disability, to Dec. 31, 1960

Status	Registrants to— Dec. 31, 1959	Registrants to— Dec. 31, 1960	Type of Disability	Active Cases as at Dec. 31, 1959	Total Closed Cases Dec. 31, 1959	Active Cases as at Dec. 31, 1960	Total Closed Cases Dec. 31, 1960
	No.	No.		No.	No.	No.	No.
Employed	37,527	37,918	Amputations	144	2,272	104	2,320
Unemployed	891	786	Neuro-muscular and skeletal system	1,131	13,541	957	13,938
Receiving treatment, training or other services	1,478	1,221	Total and partial loss of hearing or sight	221	3,203	177	3,276
			Neurological cases	147	1,656	137	1,687
Rehabilitation not feasible	4,285	4,576	Heart and vascular system	228	4,301	170	4,468
			Respiratory	1,038	11,627	831	11,844
Closed on WVA	2,216	2,439	Mental and emotional	301	1,483	200	1,653
Left Canada	1,249	1,299	Unclassified	514	5,839	438	6,039
Totals	**47,646**	**48,239**	**Totals**	**3,724**	**43,922**	**3,014**	**45,225**

Social Services.—Social workers are employed in the Branch in a variety of ways They provide casework service to veterans and their dependants when complex persona and social problems are involved. They act as consultants to other departmental official dealing with welfare matters. They assist in the work of committees, such as the Distric Authorities, which administer War Veterans Allowances and the Assistance Fund. The supervise Branch services to dependants of members of the Armed Forces. At the reques of the Department of National Defence, the Branch furnishes reports on home circumstances of Armed Forces personnel who request compassionate leave, posting or discharg because of some domestic emergency. These problems can sometimes be solved throug counselling and referral to community welfare services. The Division is especially concerned with maintaining effective liaison, in the interests of veterans and their dependants with welfare departments at all levels of government and with private social and philanthropic organizations.

During 1959 and 1960 there were 14,315 and 13,628 requests, respectively, for service from all sources.

Older Veterans.—The Department introduced an "older veterans" specialize service at the cessation of World War II when it was apparent that the many thousand of World War I veterans serving the second time would, at their age of between 50 an 63, encounter difficulties in re-entry to civilian employment. There arose a strong movement for a dual-service pension as of right but assisting these veterans into regular gainfu employment was the obvious answer. In 1946 a Special Adviser was appointed at Hea Office, and a designated Counsellor at each district office level. The Civil Servic Commission convened a forum and stressed that age alone would not be a factor in recruitment. The National Employment Service of the Unemployment Insurance Commission placed emphasis on 'older veterans' employment placement. Voluntary citize committees were formed on community centre levels to give special attention to the local veteran job seekers of mature age.

In 1947, a National Campaign for permanent jobs for older veterans was conducte by the Departments of Veterans Affairs and Labour, and the Unemployment Insuran Commission. In 1948, the same agencies joined in a national campaign on behalf the Corps of Commissionaires, a privately operated organization dedicated to finding uniformed employment for trustworthy older veterans. Private industry and government agencies responded and some 3,000 jobs were found.

Review boards were established by the Department of Veterans Affairs and the National Employment Service on district levels to direct special efforts on behalf of veterans who, because of age or other factors, were difficult to place in employment. Newspapers and periodicals were enlisted to editorially educate the public that a man of 40 years of age was not too old to hire. The Departments of Labour and Veterans Affairs produced a film entitled "Date of Birth" to discourage age-hiring limits among employers. This film had thousands of showings to employer groups, conventions, service clubs, etc., and is being brought up to date for new showings.

In January 1951, the Department introduced the "Big 3 Plan", whereby representatives of the Canadian Legion, Unemployment Insurance Commission and Department of Veterans Affairs would sit together on the community level, as required to analyse individually cases of older unemployed veterans in their areas. A book entitled "The Problem of the Older Worker", produced in 1952 by an interdepartmental committee of research specialists, ran into several editions and many copies were requested by other countries.

An interdepartmental committee of actuarial and research specialists studied, and discussed with underwriters, the discrimination against older workers in the terms of industrial pension plans. Its report, entitled "Pension Plans and the Employment of Older Workers", was released in 1956. This study has had the effect of reducing discrimination in the hiring of older persons and has led to further studies on the transfer of pension rights between different employers.

Canadian manufacturing and construction associations and two of Canada's leading merchandizing retail organizations have co-operated in the statistical examination of work, attendance, reliability, etc., of their older employees. The Department, through the Special Adviser, has taken an active part in these co-ordinated efforts and activities which have assisted greatly in keeping the employment door open to older veterans and, at the same time, have done much to make the public aware of the social and economic hazards of allowing chronological age to be a barrier to productive employment of Canadians. By learning to assess the veteran's work capabilities and by giving useful counselling, Veterans Welfare Officers have gained employers' confidence in the employment of older veterans.

When employment is not possible for any reason, the guiding principle is to use all the resources of the Department, the provinces and the municipalities, etc., to ensure that the veteran and his dependants have the necessities of life.

There are now about a quarter of a million World War I veterans still alive, their average age being 69 years, and World War II veterans are coming into the older age group at about 10,000 a year. While by no means all require specialized services, the work load is heavy and will remain so for many years.

In 1921 authority was granted for Unemployment Assistance as a temporary relief to needy World War I small disability pensioners. At its peak in the year ended Mar. 31, 1937, the disbursement was over $2,000,000 for this assistance. In 1946, $42,300 was disbursed; in 1948, $24,900; in 1954, $11,250; and in 1960 less than $1,000. The benefit has been useful as a means of relieving municipalities of granting relief to meet urgent needs while applications for War Veterans Allowance are being processed or employment found.

Unemployment Insurance Commission returns indicate World War I veterans are holding their own in the employment field. At Jan. 1, 1960, 9,591 were registered for work; at Dec. 30, 1960, the number was 9,338. These figures are new lows over the past ten years. War Veterans Allowance is available to eligible veterans wherever Unemployment Insurance benefits or other means are within the limitations of the WVA Act.

The Corps of Commissionaires continue their commendable activity. Of nearly 6,000 uniformed veterans employed, some 2,600 are under contracts with Government departments. Of these, 78 p.c. are upwards of 60 years of age and might otherwise be recipients of War Veterans Allowance. The Special Adviser on Older Veterans acts as liaison officer between Government departments and the Corps, and otherwise assists them in the private employment field. The Corps is a self-supporting non-profit organization.

Assistance Fund.—By authority of the Assistance Fund (War Veterans Allowance) Regulations, supplementary financial aid may be provided to recipients under the War Veterans Allowance Act (see p.302) who are in need. Assistance may be given as a continuing monthly grant in accordance with a formula which includes costs of shelter, fuel, food, clothing, personal care and certain health needs, or as single grants to meet needs not covered by the formula. At Jan. 1, 1961, the maximum assistance available from the Fund was $240 and $300 per annum, respectively, to single and married WVA recipients who are resident in Canada.

Applications for assistance are made to District Authorities located in the district offices of the Department across Canada. An Assistance Fund Committee, headed by the Deputy Minister, guides the district authorities in dealing with these applications. Approximately 90 p.c. of the applicants qualify for assistance and the great majority of awards are in the form of continuing monthly grants. Fund activity during 1959 and 1960 was as follows:—

Item		*1959*	*1960*
Persons assisted	No.	16,551	19,558
Persons applying during year	"	6,175	7,051
Applicants assisted	"	5,488	6,303
Proportion of applicants assisted	p.c.	89	89
Fund expenditures during year	$	2,480,479	2,964,757
Proportion of expenditures given in monthly grants	p.c.	90	91
Persons in receipt of continuing monthly grants	No.	13,365	15,290

Education and Training.—Except for disability pensioners and a few other special cases delayed by illness, eligibility for training under the Veterans Rehabilitation Act and the Veterans Benefit Act, 1954 has expired because of the time limits imposed by these Acts. The Pensioners' Training Regulations were consolidated in 1959 and now provide essential training for pensioned veterans without affecting or being affected by other benefits they may have received. These regulations also provide for the training of pensioned ex-members of the regular and reserve Forces. The numbers on training strength at Dec. 31, 1959, and Dec. 31, 1960, respectively, were as follows:—

Type of Training	*Dec. 31, 1959*	*Dec. 31, 1960*
	No.	No.
University Training—		
World War II veterans	46	16
Special Force	24	7
Vocational Training—		
World War II veterans	16	1
Special Force	3	2
Pensioner Training—		
University	13	20
Vocational	27	28
TOTALS	129	74

Under the Children of War Dead (Education Assistance) Act, help may be provided for post-secondary school training for children of deceased ex-servicemen whose deaths have been ruled by the Canadian Pension Commission as attributable to, or incurred during, war service or attributable to regular Force service. Eligible students attending approved training institutions receive an allowance of $25 a month if under age 21 and

$60 a month if over that age. The total period during which assistance may be granted may not exceed four academic years or 36 months, whichever is the lesser. In any event the benefit cannot be continued beyond the academic year in which the student reaches his 25th birthday. Prescribed fees, not exceeding $500 for any one academic year, may be paid on behalf of each student. Up to Dec. 31, 1959, 1,738 applications had been approved under this Act. At Dec. 31, 1960, the number had risen to 2,088.

Awaiting Returns Allowance.—This allowance is a sustenance grant to assist the veteran to maintain himself and his family during the early stages of a venture when the income therefrom is negligible or insufficient. Because of the time limit imposed on this benefit by the Veterans Rehabilitation Act, only veterans who settle under the Veterans' Land Act and who apply for the allowance within one year of the date of such settlement are now eligible. The allowance is paid for periods when the net income, plus the allowance, does not exceed the maximum rate of $50 per month for a single veteran and $70 for one who is married plus additional allowances for up to six children. The allowance may not be paid for more than 52 weeks and is available for two years after the date of the initial award.

Up to Dec. 31, 1960, 63,076 veterans, including 67 ex-members of the Special Force, had been approved for this benefit at a total expenditure of $27,352,646. At that date there were 45 active cases.

Vetcraft.—A short history of Vetcraft is shown in the 1959 Year Book, p. 293. Shops are now operated at Toronto and Montreal providing full-time employment for a number of veterans and widows and, in addition, small assembly work is done in Winnipeg, Regina and Calgary, providing part-time employment for other workers. Production for the year 1960 which was sold entirely to the Dominion Command of the Canadian Legion, amounted to 6,127,937 poppies and 69,229 memorial wreaths and crosses.

Section 3.—Veterans Life Insurance

Returned Soldiers' Insurance.—The Returned Soldiers' Insurance Act (SC 1920 c. 54, as amended) provided eligibility to contract for life insurance at rates comparable with those available commercially, but the medical standard required of applicants was much lower than was otherwise acceptable. Applications were accepted from 1920 to 1923 and from 1928 to 1933. No policies have been issued since Aug. 31, 1933. On Dec. 31, 1960, of the total of 48,319 policies issued there remained 9,148 policies in force for a face amount of $19,391,549.

Veterans Insurance.—The Veterans Insurance Act (SC 1952, c. 279, as amended) provides eligibility to contract for life insurance to veterans of World War II, those who served in the action in Korea and certain other groups. The period of eligibility to apply for this insurance, up to a maximum of $10,000, extends to Sept. 30, 1962. This Act makes it possible for veterans unable to meet the required medical standards of the usual commercial insurance companies to obtain life insurance. The intent of the legislation is the protection of the immediate dependants of the veteran. There are no occupational restrictions and the contract provides for a waiver of premium, without extra cost, where a veteran becomes totally and permanently disabled.

Of the 50,115 applications received to Dec. 31, 1960, only 86 had been declined for medical reasons. Of the 48,340 policies issued, 30,703 for a face amount of $95,836,042 remained in force on that date, 12,163 policies had been surrendered for their cash value and 2,793 policies were terminated by lapse and extended term insurance expiry. There were 2,681 policies terminated by death.

3.—Death Claims Intimated to Dec. 31, 1960, with Cumulative Totals 1921-50

Year	Returned Soldiers' Insurance		Veterans Insurance	
	No.	$	No.	$
1921-50	8,128	17,510,282	174	486,500
1951	379	720,810	122	370,000
1952	418	817,559	178	461,500
1953	412	813,446	189	544,500
1954	421	821,930	187	495,500
1955	428	799,440	177	512,740
1956	434	813,743	216	590,868
1957	447	842,608	225	639,048
1958	486	902,324	254	687,145
1959	436	835,327	283	806,546
1960	462	928,255	357	1,096,010

Section 4.—Land Settlement and Home Construction

Veterans' Land Act.—The major amendments made to the Act in 1959, as summarized on p. 339 of the 1960 edition of the Year Book, created a substantial increase in the volume of loan approvals and expenditures in 1960. A total of 1,851 loans were approved on behalf of veterans desiring settlement as small holders and commercial fishermen, 10.2 p.c. more than in the previous year. While this increase was significant, the most marked effect of the amendments occurred in the field of farm loans with financial assistance to the amount of $14,914,122 being expended on behalf of 2,086 farmers compared with $5,275,344 for 938 farmers in 1959.

In broadening the uses and raising the financial ceiling of farm loans from $9,000 to $20,000, the legislative amendments made in 1959 stipulated that the basic purpose of such loans was the acquisition or development of economic farm units. Under the Regulations, such a unit is defined to mean an organized assembly of farm land, buildings, livestock and farm equipment, or any combination thereof, which will produce a net income capable of retiring the remaining capital cost of the farm (75 p.c.) over a period of 30 years and of supplying the veteran and his family with a typical Canadian standard of living. These provisions, together with other requirements that each loan must be based on the estimated agricultural productive value of the unit and that an applicant for a loan in excess of 65 p.c. of the agricultural productive value must agree to follow an acceptable farm plan, constitute 'built-in' safeguards both for the investment of public funds and the successful establishment of veterans as full-time farmers.

These various safeguards and controls have increased the duties and responsibilities of the Farm Credit Advisers in the field. In addition to the advisory and rehabilitation service previously provided, intensive pre-loan counselling has proved essential to promote the best use of the increased loans available. The Credit Adviser must, with the applicant, assess the farmer's credit needs, ensure that he is capable of making proper use of the funds available within the limits of the legislation and ensure that the money is expended in an effective manner. It is also his responsibility to appraise the farm unit that will represent security for the loan and to estimate its agricultural productive value under typical operation. Appraisal on this basis has required an intensified training program and the assembly of considerable data relating to gross income, operating costs, etc., pertaining to the various types of farming followed in different parts of Canada.

Arrangements were completed during 1960 for the joint utilization by the Veterans Land Administration and the Farm Credit Corporation of the 197 Farm Credit Advisers and 38 Credit Supervisors employed throughout Canada by both organizations. The work of these officials now relates almost entirely to full-time farming applications and supervised farm loan accounts; the work-load pertaining to small holding establishments and new house construction is handled by 57 Settlement Officers and 67 Construction Supervisors.

At the end of December 1960, a total of 86,164 veterans had received financial assistance under the various types of settlement provided in the Act and more than $483,000,000 had been expended. Active accounts numbered 54,007, including 553 Indian veterans settled on Indian reserves whose accounts are administered by the Department of Citizenship and Immigration. During 1960, approvals were made on behalf of 4,544 veterans of World War II and the Special Force, including 2,086 for full-time farming, 1,812 for small holdings, 39 for commercial fishing, 20 for settlement on Crown lands, 24 on Indian reserves and 563 for home building on city-size lots. During 1960, a total of 10,965 appraisals were carried out. The joint field staff made 8,422 farm appraisals between Apr. 1 and Dec. 31, 1960, of which 2,168 related to farm loan applications made under the Veterans' Land Act.

At Dec. 31, 1960, a total of 29,262 houses had been started, of which 27,644 were completed. During 1960, 1,526 houses were started, 70 more than in 1959; completions in 1960 numbered 1,607 compared with 1,564 in 1959. In addition, 1,158 veterans received approval to effect additions or improvements to their homes and other buildings.

The repayment record of the settled veterans continues to be very satisfactory. The total amount returned to the Treasury from current active accounts represents 103.7 p.c. of the total amount due and owing on 51,614 accounts. Of the $441,000,000 expended on behalf of 75,743 veterans established with repayable contracts, over 56 p.c. had been repaid by the end of December 1960. Included in this percentage was the amount of $57,000,000 constituting conditional grants earned by 34,958 veterans who had fulfilled the terms of settlement for the first ten years of their contracts.

One of the factors contributing to the very favourable repayment record of the VLA settlers is that over 23,000 have adopted one of the various pre-arranged payment plans made available to them such as post-dated cheques, orders on pensions, and salary assignments. In addition, there were 880 share-of-crop agreements in effect in the spring wheat areas of the Prairie Provinces. At the end of December 1960, 1,821 veterans had completely repaid their contract debts and had only to fulfil the residence or personal operation requirements of their agreements for the remainder of their ten-year conditional grant periods in order to acquire title.

4.—Summary of Settlement and Expenditures under the Veterans' Land Act, as at Dec. 31, 1960

NOTE.—This table does not include details relative to sales of reverted or surplus property to civilian purchasers.

Item		Full-Time Farming	Small Holdings	Commercial Fishing	Provincial Lands	Federal Lands	Indian Reserves	City-Size Lots	Total
Approved for financial assistance..........	No.	29,132	45,435	1,176	4,876	487	1,616	3,442	86,164
Amount of public funds expended..........	$	174,423,934	261,685,034	5,061,780	10,657,514	1,039,085	3,588,892	26,835,716	483,291,955
Approximate average expenditure per approval	$	5,987	5,760	4,304	2,186	2,134	2,221	7,796	5,609
Total conditional grants earned.......	No.	17,468	13,396	576	3,373	145	1,045	—	36,003
Average amount of grant earned.......	$	2,058	1,495	1,780	2,293	2,300	2,284	—	1,873
Grants earned, title released...........	No.	6,460	5,897	212	3,373	145	1,045	—	17,132

5.—Summary of House Construction under the Veterans' Land Act, as at Dec. 31, 1960

Item	Full-Time Farming	Small Holdings	Commercial Fishing	Provincial Lands	Federal Lands	City-Size Lots	Total
	No.	No.	No.	No.	No.	No.	No.
Houses completed (from 1942)........	1,864	21,231	292	1,394	119	2,744	27,644
Houses under construction............	76	855	4	21	5	657	1,618
Contracts let (work not yet started)..	156	430	5	104	1	—	696
Net Approvals for New Housing..................	**2,096**	**22,516**	**301**	**1,519**	**125**	**3,401**	**29,958**

Section 5.—Veterans' Bureau

The Veterans' Bureau, which has completed its 29th year of operation, is a branch of the Department of Veterans Affairs administered from Head Office in Ottawa by an officer called the Chief Pensions Advocate. He is assisted by Pensions Advocates who are located in all districts in Canada in which offices of the Department are situated, and at the district office in London, England.

The duties of Pensions Advocates, most of whom are lawyers, are to assist former members of the Armed Forces and their dependants, and former members of the various auxiliary organizations such as merchant seamen, firefighters and others, in preparing and presenting pension claims to the Canadian Pension Commission. The Pensions Advocates also appear as counsel for applicants before the Appeal Boards of the Commission and, in addition, they advise pensioners and applicants upon any provision of the Pension Act or phase of pension law or administration that may have a bearing on the applicant's pension claim. No charge is made for the services of the Veterans' Bureau.

Requests for the services of the Veterans' Bureau continue to grow from year to year. Since 1953, 40,580 claims have been submitted by the Veterans' Bureau to the Canadian Pension Commission for adjudication. During the year ended Mar. 31, 1960, a total of 6,520 claims were submitted to the Canadian Pension Commission by the Veterans' Bureau, a 26-p.c. increase over the number presented in 1953.

During the same fiscal year the Veterans' Bureau submitted 1,526 straight entitlement claims to the Canadian Pension Commission with respect to service rendered in World War I and peacetime, of which 173 or about 11 p.c. were wholly or partially granted. However, with respect to claims based on service in World War II and Korea, out of a total of 3,692 presented, 1,481 or approximately 40 p.c. were wholly or partially granted. In addition, during the year ended Mar. 31, 1960, the Veterans' Bureau submitted 1,302 miscellaneous claims to the Canadian Pension Commission (these included applications for leave to re-open, following an Appeal Board Hearing, claims for higher degree of aggravation, increased assessment, retroactive awards, etc.), of which 680 or 52 p.c. were wholly or partially granted.

Section 6.—Veterans Pensions

Canadian Pension Commission.—The Canadian Pension Commission is a statutory body charged with the administration of the Pension Act and the Civilian War Pensions and Allowances Act. The members of the Commission are appointed by the Governor in Council who may also impose upon the Commission duties in respect of any grants in the nature of pensions, etc., made under any statute other than the Pension Act. It reports to Parliament through the Minister of Veterans Affairs.

It is the responsibility of the Commission to adjudicate on claims for injury or disease resulting in disability or death, incurred during service with the Canadian Navy, Army or Air Force during war or peacetime. The Commission may also supplement certain awards of pension made by the British or Allied Governments (see 1956 Year Book, p. 304). The Commission's representatives, called Pension Medical Examiners, are located in most of the district offices of the Department of Veterans Affairs across the country.

The Pension Act.—Previous issues of the Year Book contain information on the development of Canadian pension legislation, together with yearly statistics of numbers and liabilities. The Pension Act has not been amended since 1957. The major amendments at that time are summarized in the 1959 Year Book, p. 297.

The annual rates for a 100-p.c. disability for all ranks up to and including that of Lieutenant-Colonel and equivalent ranks are:—

	$
Pensioner	1,800
Wife	600
First child	240
Second child	180
Each subsequent child	144

For assessments lower than 100 p.c., the awards are proportionately less. The rate of personal pension is slightly higher if the pensioner held the rank of Colonel or higher rank but the additional pension for wives and children remains the same for all ranks.

In addition to pension, attendance allowance is payable to a pensioner who is totally disabled and in need of attendance, and varies from a minimum of $480 to a maximum of $1,800 depending on the amount of attendance required. While a pensioner must be totally disabled to receive this allowance, the disability resulting in the need of attendance may be non-pensionable. The rates for the various classifications under which awards are made are set by the Commission. These rates are reviewed from time to time and such changes as may be considered advisable made. In line with this policy, the rate of attendance allowance for total blindness was increased from $1,200 to $1,440 per annum with effect from Apr. 1, 1960, and adjustments made where applicable.

The annual rates of pension for widows and children of all ranks up to and including that of Lieutenant-Colonel and equivalent ranks are:—

	$
Widow	1,380
First child	480
Second child	360
Each subsequent child	288

Rates for widows are slightly higher if the deceased veteran held the rank of Colonel or higher rank but those for children remain the same for all ranks.

The Civilian War Pensions and Allowances Act provides for the payment of pensions to, or on behalf of, persons who served in certain civilian groups that were closely associated with the World War II effort, and who suffered injury or death as a result of such service; these include merchant seamen, saltwater fishermen, auxiliary services personnel, ferry pilots of the RAF Transport Command, firefighters who served in the United Kingdom, etc.

6.—Pensions in Force under the Pension Act, as at Dec. 31, 1960

Service	Disability		Dependant		Disability and Dependant	
	Pensions in Force	Liability	Pensions in Force	Liability	Pensions in Force	Liability
	No.	$	No.	$	No.	$
World War I	46,054	36,128,959	14,681	19,449,683	60,735	55,578,642
World War II	105,332	69,130,275	17,278	19,077,573	122,610	88,207,848
Peacetime	1,359	727,210	505	787,739	1,864	1,514,949
Special Force	1,644	921,966	171	212,901	1,815	1,134,867
Totals	**154,389**	**106,908,410**	**32,635**	**39,527,896**	**187,024**	**146,436,306**

The total number of World War I disability and dependant pensions in force at Dec. 31, 1959 was 63,240, and for World War II, 122,296. Thus during 1960 the decrease in World War I pensions numbered 2,505 and in World War II pensions 314. The Commission still receives claims from World War I veterans and their dependants. In 1960, 149 new disability pensions and 546 dependant pensions were authorized in respect of World War I veterans and 1,774 new disability pensions and 586 dependant pensions in respect of World War II veterans.

In addition to its other duties, the Commission authorizes and pays the monetary grants which accompany certain awards for gallantry granted by the Sovereign to members of the Canadian Forces during World War II. Payments in respect of such awards earned by members of the Canadian Forces during World War I or earlier are paid by the United Kingdom Government. Advice was received from that Government that the annuity accompanying the award of the Victoria Cross had been increased to £100, payable regardless of rank or means. As a result, the Canadian Government cancelled the annuities in payment to holders of the Victoria Cross and granted annuities of $300, payable monthly, commencing Apr. 1, 1960, to each surviving member of the Canadian Forces who had been awarded the Victoria Cross during World War II, regardless of rank or means. Previously, only those below commissioned rank received an annuity—$50 paid semi-annually—except in cases of need due to age or infirmity, when an annuity up to $375 could be paid regardless of rank. In addition to the annuity, holders of the award below commissioned rank who were disability pensioners or War Veterans Allowance recipients were also entitled to receive a per diem allowance of 12½ cents a day. This allowance was not affected by the increased annuity.

Section 7.—War Veterans Allowances

War Veterans Allowance Board.—The War Veterans Allowance Board is a statutory body responsible to the Minister of Veterans Affairs for the administration of the War Veterans Allowance Act. Members are appointed by the Governor in Council and at present number seven, one of whom is the Chairman; two Members serve without remuneration. The Board is located in Ottawa. Its functions include the responsibility of ensuring that all 18 district authorities interpret the legislation in a fair, reasonable and equitable manner. It standardizes administrative procedures and reviews the decisions of the district authorities and its own former decisions.

The Board adjudicates all applications from widows of veterans who were not residing with or being maintained by their veteran-husband at the time of his demise. There were 103 such cases received during 1960, of which 80 were approved.

One of the important functions of the Board is to consider all appeals from veterans, widows or orphans against any decision of the WVA district authorities. These emanate from applicants, recipients or their relatives or agents on their behalf. Agents include representatives of veterans organizations, principally the Canadian Legion. Appeals are also initiated by the Board itself and thus may be taken against district authorities' decisions or former Board decisions. Such appeal decisions may approve, set aside, alter or amend any former decision of the Board or any decision of the district authorities. The subject matter of such appeals may include the effective date of awards, rate of allowances to be granted, service eligibility, marital or dependent status, resident classification, exemptions and assessment of income, classification and evaluation of real or personal property.

War Veterans Allowance Act.—The Government in the late 1920's became aware that many war veterans were experiencing difficulties in providing for their own maintenance because of age or physical or mental incapacities. Following study the consensus of medical opinion indicated that service in the trenches had pre-aged a veteran by ten years. Accordingly, the War Veterans Allowance Act was passed in 1930 to provide a maintenance allowance to war veterans who, by reason of age or physical or mental disability, were no longer capable of maintaining themselves.

Since its inception, this Act has been amended on ten occasions. Each time, the provisions have been extended to meet additional needs of war veterans and their dependants. In 1943, provision was made to pay allowances to widows of veterans. In the following year, allowances were extended to orphans of veterans. In 1950, an amendment was passed setting up district authorities empowered to adjudicate applications which previously had been the responsibility of the Board (see p. 302).

The most recent legislative amendments became effective Aug. 1, 1960. A new and important principle provides for payments of allowances to recipients who take up residence outside Canada providing they were resident in Canada for 12 months immediately prior to their departure. This amendment permits many recipients to reside in other countries where the climate is less severe or to live with members of their families from whom they have been separated. Provision is also made for allowances to be paid to ex-Imperials and Allied Veterans of World War II who have been resident in Canada for a period of ten years; widows and orphans of these veterans also become eligible. Other details on eligibility are given in the 1959 Year Book, p. 298. The rates of allowances payable and the income ceilings have not changed since Nov. 1, 1957. Details are to be found in the 1959 Year Book, p. 299.

The numbers of veterans and others in receipt of allowances at the end of each of the years 1956-60, together with the amounts of allowances paid, are as follows:—

As at Dec. 31—	*Veterans in Receipt of Allowances*	*Others in Receipt of Allowances*	*Total in Receipt of Allowances*	*Expenditure*
	No.	No.	No.	$
1956	39,543	15,193	54,736	40,853,773
1957	41,820	16,601	58,421	45,187,400
1958	45,466	18,659	64,125	53,970,728
1959	47,393	20,141	67,534	56,927,614
1960	48,521	21,421	69,942	58,207,130

During 1960, 72,836 cases were reviewed by the 19 district authorities across Canada so that changes in the financial, physical or domestic circumstances of the recipients concerned might be reflected in the allowance being paid; 20,654 cases were reviewed by the War Veterans Allowance Board at Ottawa to ensure uniformity in the application of the provisions of the legislation in all districts; and 576 appeals from adjudications were dealt with by the Board.

Section 8.—Commonwealth War Graves Commission

Incorporated by Royal Charter in 1917 as the Imperial War Graves Commission, the name was changed by a Supplemental Royal Charter on Apr. 1, 1960 to the Commonwealth War Graves Commission. The Governments of the United Kingdom, Canada, Australia, New Zealand, South Africa, India and Pakistan are members of the Commission and are represented by their High Commissioners in London.

The Commission is entrusted with the marking and maintenance, in perpetuity, of the graves of those of the British Empire and Commonwealth Armed Forces who lost their lives between Aug. 4, 1914 and Aug. 31, 1921, and between Sept. 3, 1939 and Dec. 31, 1947. The Commission erects memorials to commemorate those with no known grave. In many of the cemeteries and plots a central feature is the Cross of Sacrifice or the Great Stone of Remembrance. The Minister of Veterans Affairs is the Agent of the Commission in Canada and the office of the Secretary-General of the Canadian Agency is in the Veterans Affairs Building, Ottawa.

The area of responsibility of the Canadian Agency is the Continent of North America but it has also certain duties of inspection in Argentina, the Bahamas, Barbados, Bermuda, Brazil, British Guiana, British Honduras, Chile, Costa Rica, Cuba, Falkland Islands, French West Indies, Guatemala, Hawaiian Islands, Jamaica, Leeward Islands, Netherlands Antilles, Panama Canal Zone, Peru, Puerto Rico, Trinidad, Uruguay and Windward Islands. In North America the Agency is responsible for about 13,000 war graves in more than 2,000 cemeteries. Approximately 4,100 servicemen of both Wars, missing in operations while based in North America, are commemorated on memorials erected at Victoria, B.C., Halifax, N.S., and Ottawa, Ont. The only Stone of Remembrance in Canada erected by the Agency is in Brookside Cemetery, Winnipeg, and was unveiled by the Premier of Manitoba on Oct. 2, 1960. It honours the memory of the sailors, soldiers and airmen of the Commonwealth who served in World War I and World War II and who lie buried in Canada.

CHAPTER VII.—CRIME AND DELINQUENCY*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Section 1.—Canadian Criminal Law and Procedure†

The system under which justice is administered in a State is never rigid. To have it so would be neither expedient nor indeed possible. A judicial system must grow and adapt itself to the requirements of the people and the exact limits of the powers of different legislative bodies require continued definition.

The criminal law of Canada has as its foundation the criminal common law of England built up through the ages and consisting first of customs and usages, and later expanded by principles enunciated by generations of judges. There is no statutory declaration of the introduction of English criminal law into those parts of Canada that are now the Provinces of New Brunswick, Nova Scotia and Prince Edward Island. Its introduction there depends upon a principle of the common law itself by which English law was declared to be in force in uninhabited territory discovered and planted by British subjects, except in so far as local conditions made it inapplicable. The same may be said of Newfoundland although the colony dealt with the subject in a statute of 1837. In Quebec its reception depends upon a Royal Proclamation of 1763 and the Quebec Act of 1774. In each of the other provinces and in the Yukon and Northwest Territories the matter has been dealt with by statute.

The judicial systems of the provinces as they exist today are based upon the British North America Act of 1867. Sect. 91 of the Act provides that "The exclusive legislative authority of the Parliament of Canada extends to . . . the criminal law, except the constitution of courts of criminal jurisdiction but including the procedure in criminal matters". By Sect. 92 (14), the legislature of the province exclusively may make laws in relation to "the administration of justice in the province, including the constitution, maintenance and organization of provincial courts, both of civil and criminal jurisdiction and including procedure in civil matters in its courts". The Parliament of Canada may, however (Sect. 101), establish any additional courts for the better administration of the laws of Canada.

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* Except as otherwise credited, this Chapter has been revised in the Judicial Section, Health and Welfare Division, Dominion Bureau of Statistics.

† Prepared by the Criminal Law Section, Department of Justice, Ottawa.

It should be noted that the Statute of Westminster, 1931 effected important changes particularly by abrogating the Colonial Laws Validity Act, 1865 (U.K.) and confirming the right of a dominion to make laws having extraterritorial operation. Particulars of the federal judiciaries are given in Chapter II, pp. 75-76, and provincial judiciaries are dealt with briefly at pp. 76-77; more detailed information on provincial judiciaries is given in the 1954 Year Book, pp. 48-55.

At the time of Confederation each of the colonies affected had its own body of statutes relating to the criminal law. In 1869, in an endeavour to assimilate them into a uniform system applicable throughout Canada, Parliament passed a series of Acts some of which dealt with offences of special kinds and others with procedure. Most notable of the latter was the Criminal Procedure Act, but other Acts provided for the speedy trial or summary trial of indictable offences, the powers and jurisdiction of justices of the peace in summary conviction matters and otherwise, and the procedure in respect of juvenile offenders.

Codification of the criminal law through a Criminal Code Bill founded on the English draft code of 1878, Stephen's *Digest of Criminal Law*, Burbidge's *Digest of the Canadian Criminal Law*, and the relevant Canadian statutes was brought about by the Minister of Justice, Sir John Thompson, in 1892. This Bill became the Criminal Code of Canada and came into force on July 1, 1893. It must be remembered, however, that the Criminal Code was not exhaustive of the criminal law. It was still necessary to refer to English law in certain matters of procedure and it was still possible to prosecute for offences at common law. Moreover, Parliament has declared offences against certain other Acts, e.g., the Opium and Narcotic Drug Act, to be criminal offences and the same was done in the Defence of Canada Regulations and the Wartime Prices and Trade Board Regulations (neither now in force) promulgated under the authority of the War Measures Act.

It is often difficult to distinguish between 'law' and 'procedure'. Procedure may be interpreted to relate simply to the organic working of the courts but, in a wider sense, it may also affect the rights or alter the legal relations arising out of any given state of facts. For present purposes it will be useful to note that writers on jurisprudence describe law as being substantive or adjective. "Substantive law is concerned with the ends which the administration of justice seeks; procedural (adjective) law deals with the means and instruments by which these ends are to be obtained."* With reference to the criminal law, the former may be taken to include the provisions concerning criminal responsibility, the definition of 'offences' and the punishment for those offences, and the latter to include provisions for enforcement, e.g., powers to search and to arrest, for the modes of trial and for the proof of facts. Broadly speaking, the Criminal Code observes the distinction although it might appear that the provisions for preventive detention of habitual criminals and criminal sexual psychopaths partake of the nature of both classes.

An examination and study of the Criminal Code was authorized by Order in Council dated Feb. 3, 1949, and the Commission assigned the task of revising the Code presented its report with a draft Bill in February 1952. After coming before successive sessions of Parliament it was finally enacted on June 15, 1954 and the new Criminal Code (SC 1953-54, c. 51) came into effect on Apr. 1, 1955. A short outline of the system that existed under the repealed Code together with the major revisions effected by the new Code is given in the 1955 Year Book, pp. 295-298.

Since the new Code came into force several amendments have been made, for the most part in relation to procedure. Among the most notable of these, as well in point of procedure as of substance, are: an amendment in 1956 providing that motions for leave to appeal to the Supreme Court of Canada in criminal cases should be heard by a quorum (at least five) of judges of that Court instead of a single judge; amendments effected by SC 1959, c. 41, providing a statutory extension of the definition of "obscenity" and making provision for seizure and condemnation of offending material without a charge necessarily being laid against any person; extensive amendments relating to the allowing of time for payment of fines; amendments dealing with offences committed in aircraft in flight over the high seas; an amendment forbidding the publication in a newspaper or broadcast of a report that any admission or confession was tendered in evidence at a preliminary inquiry or a report of the nature of such admission or confession unless the accused has been discharged or, if the accused has been committed for trial, the trial has ended.

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* Salmond on *Jurisprudence*, 7th Edition, p. 496.

The Parole Act (SC 1958, c. 38), brought into force on Feb. 15, 1959, revises the parole system and provides for the establishment of a National Parole Board (see p. 333).

It is most important to notice that in 1960 (SC 1960, c. 44), Parliament enacted what is to be known as the Canadian Bill of Rights. Although the Act sets out further details, its general scope appears in Sect. 1 which reads as follows:—

> "1. It is hereby recognized and declared that in Canada there have existed and shall continue to exist without discrimination by reason of race, national origin, colour, religion or sex, the following human rights and fundamental freedoms, namely,
>
> (*a*) the right of the individual to life, liberty, security of the person and enjoyment of property, and the right not to be deprived thereof except by due process of law;
>
> (*b*) the right of the individual to equality before the law and the protection of the law;
>
> (*c*) freedom of religion;
>
> (*d*) freedom of speech;
>
> (*e*) freedom of assembly and association; and
>
> (*f*) freedom of the press."

Section 2.—Adult Offenders and Convictions

The main interest in adult criminal statistics is concerned with those persons guilty of the more serious crimes. Such offenders are fewer than those who commit summary conviction offences but, from the standpoint of the protection of society, they are more important.

Statistics of indictable crimes are based on *persons*. When a person is prosecuted at the same hearing for several offences, one of those offences is selected for tabulation. The rule followed is to select the offence for which the proceedings were carried to the furthest stage—to conviction and sentence where the prisoner was tried on several charges; where there were several convictions, the offence selected is that for which the heaviest punishment was awarded; where the final result of proceedings on two or more charges was the same, the most serious offence (as measured by the maximum penalty allowed by the law) appears in the tables. Where a person was prosecuted for one offence and convicted of another (e.g., charged with murder and convicted of manslaughter), the case appears only under the offence for which he was convicted. Statistics of summary conviction offences (pp. 318-322) are based on *convictions*.

The figures include only cases finally determined within the year. Those not entirely disposed of within the year (e.g., tried but sentence postponed) are held over for the next year's report.

The new Criminal Code, which became law in 1954 (SC 1953-54, c. 51), necessitated the alteration of certain statistical classifications. For instance, in the classification of indictable offences regroupings were made and some items added and others dropped. Also, indictable offences under the Criminal Code were shown separately from those under federal statutes. Summary convictions were classified as offences under the Criminal Code, federal statutes, provincial statutes and municipal by-laws, and methods of trial were arranged to conform with the provisions of the new Criminal Code. Thus, any comparisons between the data for 1956 and subsequent years and the data previously published should be made with care.

Subsection 1.—Adults Convicted of Indictable Offences

During 1959, the courts of Canada dealt with 34,812 adults charged with 64,085 indictable offences, of whom 31,092 were found guilty of 56,204 offences. These figures show a decrease from those of 1958 when 38,415 adults were charged with 69,983 indictable offences and 34,546 were found guilty of 62,839 offences.

1.—Persons Convicted of Indictable Offences, with Ratio per 100,000 Population 16 Years of Age or Over, by Province, 1958 and 1959

Province or Territory	Persons Convicted		Persons Convicted per 100,000 Population 16 Years of Age or Over	
	1958	1959	1958	1959
	No.	No.	No.	No.
Newfoundland	575	551	231	217
Prince Edward Island	134	84	213	131
Nova Scotia	1,353	1,362	299	299
New Brunswick	991	758	283	211
Quebec	7,127	6,250	232	199
Ontario	12,953	12,077	330	302
Manitoba	1,501	908	260	155
Saskatchewan	1,558	1,165	271	200
Alberta	3,766	3,404	489	429
British Columbia	4,512	4,415	425	411
Yukon and Northwest Territories	76	118	382	578
Canada	**34,546**	**31,092**	**311**	**274**

Indictable offences are classified according to the main sources of the criminal law—the Criminal Code and federal statutes. Indictable offences under the Criminal Code are grouped into six classes as shown in Table 2. In 1959, persons convicted of assaults of various kinds and obstructing police represented 79.6 p.c. of Class I, which covers offences against the person. In that year 16 persons were convicted of murder, 17 of attempted murder and 99 of manslaughter as compared with 16, 11 and 82, respectively, in 1958.

Classes II to V deal with offences against property. Thefts predominate among the offences in these classes, and breaking and entering and robbery, serious crimes which involve acts of violence, are the next most numerous. In Class VI, which includes miscellaneous offences, the most numerous convictions are for offences connected with gaming, betting and lotteries. In 1959 there were 565 offenders under the Opium and Narcotic Drug Act, of whom 470 were convicted of possessing heroin and 55 of trafficking; 387 were males and 511 were born in Canada. British Columbia courts convicted 59.3 p.c. of the drug offenders and Ontario courts 31.7 p.c.

2.—Adults Charged and Convicted of Indictable Offences, by Class of Offence, 1958 and 1959

Class of Offence	1958			1959			Increase or Decrease in Persons Convicted
	Adults Charged	Adults Convicted		Adults Charged	Adults Convicted		
		M.	F.		M.	F.	
	No.	No.	No.	No.	No.	No.	p.c.
Criminal Code							
Class I.—Offences against the Person	**5,987**	**4,685**	**190**	**5,536**	**4,250**	**210**	**− 8.5**
Abduction and kidnapping	29	26	1	21	9	1	−63.0
Assault, causing bodily harm, common, on police and obstruction	4,191	3,323	134	3,854	3,035	145	− 8.0
Offences against females[1]	838	631	13	788	571	21	− 8.1
Causing death by criminal negligence,[2] manslaughter and murder	201 r	96	2	220	112	3	+17.3
Attempted murder, causing bodily harm and danger	153	114	12	165	117	14	+ 4.0
Duties tending to preservation of life	58	50	1	30	20	3	−54.9
Other offences against the person	517 r	445	27	458	386	23	−13.3
Class II.—Offences against Property with Violence	**7,408**	**6,799**	**97**	**6,981**	**6,332**	**103**	**− 6.7**
Breaking and entering a place, extortion and robbery	7,408	6,799	97	6,981	6,332	103	− 6.7
Class III.—Offences against Property without Violence	**17,675**	**14,839**	**1,237**	**17,527**	**14,615**	**1,336**	**− 0.8**
Fraud and false pretences	2,242	1,775	171	2,112	1,659	178	− 5.6
Having in possession	1,506	1,228	55	1,698	1,381	73	+13.3
Theft	13,927	11,836	1,011	13,717	11,575	1,085	− 1.5
Class IV.—Malicious Offences against Property	**683**	**567**	**21**	**704**	**580**	**25**	**+ 2.9**
Arson and other fires	105	85	2	110	83	5	+ 1.1
Other interference with property	578	482	19	594	497	20	+ 3.2
Class V.—Forgery and Other Offences Relating to Currency	**1,057**	**906**	**109**	**963**	**807**	**90**	**−11.6**
Forgery and uttering forged documents	1,029	881	107	890	749	85	−15.6
Offences relating to currency	28	25	2	73	58	5	+133.3
Class VI.—Other Offences	**5,006**	**4,350**	**224**	**2,434**	**1,991**	**173**	**−52.7**
Criminal negligence in operation of motor vehicles	103	84	—	113	85	1	+ 2.4
Driving while ability to drive is impaired	2,116	1,950	29	199	185	2	−90.6
Driving while intoxicated	177	155	1	28	26	—	−83.4
Gaming, betting and lotteries	449	397	24	517	450	22	+12.1
Keeping bawdy houses	121	29	72	139	38	91	+27.7
Various other offences	2,040	1,735	98	1,438	1,207	57	−31.0
Totals, Criminal Code	**37,816**	**32,146**	**1,878**	**31,145**	**28,575**	**1,937**	**−10.3**
Federal Statutes							
Opium and Narcotic Drug Act	558	327	154	642	379	178	+15.8
Other statutes	41	39	2	25	23	—	−43.9
Totals, Federal Statutes	**599**	**366**	**156**	**667**	**402**	**178**	**+11.1**
Grand Totals	**38,415**	**32,512**	**2,034**	**34,812**	**28,977**	**2,115**	**−10.0**

---

[1] Includes abortion, indecent assault on female, sexual intercourse and attempt, incest, procuring, rape, attempted rape and seduction.

[2] Includes causing death in the operation of a motor vehicle or otherwise.

Table **3** shows that in 1959, 59.4 p.c. of the persons convicted of indictable offences had not gone beyond elementary school grades in education, 52.8 p.c. were 24 years of age or younger, 9.0 p.c. were 45 years of age or over, and 78.0 p.c. lived in urban centres. Of these offenders, 93.2 p.c. were males, 91.0 p.c. were born in Canada, 65.3 p.c. were unmarried, 19.1 p.c. were recorded as labourers and 11.5 p.c. had no remunerative employment.

3.—Persons Convicted of Indictable Offences classified by Occupation, Marital Status, Sex, Birthplace, etc., 1958 and 1959

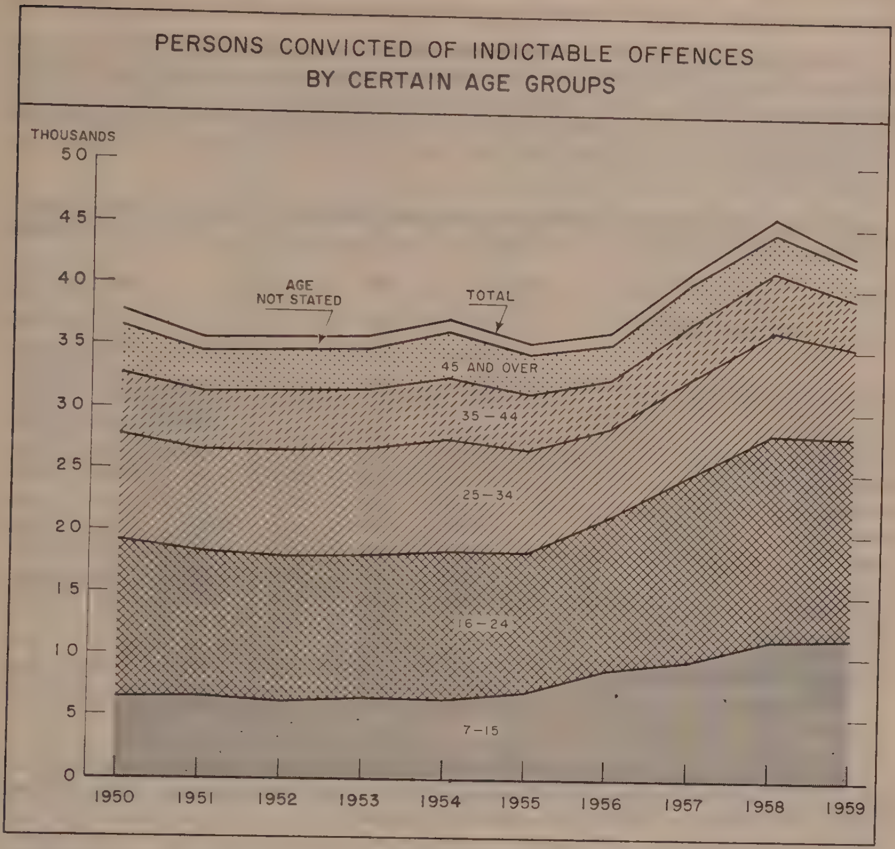
Item	1958	1959
	No.	No.
Total Convictions	**34,546**	**31,092**
TYPE OF OCCUPATION		
Agriculture	1,662	1,298
Armed Services	478	279
Clerical	1,108	928
Commercial and managerial	1,899	1,950
Construction	4,911	4,611
Finance	28	41
Fishing, trapping and logging	1,578	1,337
Labourer	6,392	5,948
Manufacturing and mechanical	3,664	3,094
Mining	800	603
Service—		
Domestic	858	671
Personal	1,048	852
Professional	315	296
Public and protective	58	64
Other	119	150
Student	1,531	1,650
Transportation and communications	3,132	2,708
Unemployed and retired (incl. housewives)	3,529	3,582
Not given	1,436	1,030
MARITAL STATUS		
Single	21,183	20,291
Married	10,138	8,326
Widowed	359	325
Divorced	283	266
Separated	1,161	1,049
Not given	1,422	835
SEX		
Male	32,512	28,977
Female	2,034	2,115

Item	1958	1959
	No.	No.
EDUCATIONAL STATUS		
Unable to read or write	499	326
Elementary	18,234	16,144
High school	11,707	11,295
Superior	840	381
Grade not stated	335	609
Not given	2,931	2,337
AGE		
16 to 19 years	9,614	9,734
20 to 24 years	7,289	6,688
25 to 44 years	13,182	11,146
45 years or over	3,248	2,788
Not given	1,213	736
BIRTHPLACE		
Canada	30,569	28,300
British Isles and other Commonwealth	803	649
United States	319	250
Europe	1,499	1,516
Asia	49	51
Other foreign countries	11	22
Not given	1,296	304
RESIDENCE		
Urban centres	25,703	24,261
Rural districts	6,960	5,601
Indeterminate	801	791
Not given	1,082	439

Female Offenders.—There were 2,115 female offenders convicted of indictable offences in 1959, 42.7 p.c. of whom were in Ontario, 17.4 p.c. in British Columbia and 14.7 p.c. in Quebec. Of the total females convicted in that year, 54.8 p.c. were found guilty of theft and having in possession, 8.4 p.c. of false pretences and fraud and 6.9 p.c. of various assaults.

4.—Females Convicted of Indictable Offences, by Province, 1958 and 1959

Province or Territory	Females Convicted		Females Convicted to Total Convictions	
	1958	1959	1958	1959
	No.	No.	p.c.	p.c.
Newfoundland	51	41	8.9	7.4
Prince Edward Island	1	1	1.0	1.2
Nova Scotia	70	80	5.2	5.9
New Brunswick	21	29	2.1	3.8
Quebec	306	311	4.3	5.0
Ontario	799	904	6.2	7.5
Manitoba	112	45	7.5	5.0
Saskatchewan	92	51	5.9	4.4
Alberta	220	280	5.8	8.2
British Columbia	358	369	7.9	8.4
Yukon and Northwest Territories	4	4	5.3	3.4
Canada	**2,034**	**2,115**	**5.9**	**6.8**



PERSONS CONVICTED OF INDICTABLE OFFENCES BY CERTAIN AGE GROUPS

Multiple Convictions.—Table **5** shows the number of persons having more than one conviction at a court appearance for the years 1955-59. Multiple convictions occur most often in cases of forgery and uttering, false pretences, theft, having in possession, and breaking and entering.

5.—Persons Convicted of More than One Offence at the Time of Trial compared with Persons Convicted of One Offence, 1955-59

Item	1955	1956	1957	1958	1959
	No.	No.	No.	No.	No.
Persons Convicted of—					
2 offences	3,280	3,463	4,308	4,685	4,396
3 offences	1,089	1,101	1,337	1,469	1,515
4 offences	528	607	826	852	816
5 offences	306	306	394	463	474
6 offences	189	209	259	290	298
7 offences	126	119	146	191	215
8 offences	113	108	159	180	166
9 offences	91	83	100	110	109
10 offences	56	69	87	104	69
11 to 20 offences	200	252	288	364	334
21 offences and over	92	76	95	163	113
Totals, Convicted of More than One Offence	6,070	6,393	7,999	8,871	8,505
Totals. Convicted of One Offence	22,203	21,020	23.766	25,675	22,587
Grand Totals	**28,273**	**27,413**	**31,765**	**34,546**	**31,092**

Disposition of Cases and Recidivism.—Of all suspects before the courts for indictable offences in 1959, 89.3 p.c. were adjudged guilty; the convictions against males (89.6 p.c.) constituted a higher percentage than those against females (85.9 p.c.) and varied considerably between provinces. New Brunswick and Prince Edward Island showed the highest percentages (97.7 and 96.5 p.c., respectively) of convictions and Ontario the lowest (87.1 p.c.).

6.—Persons Charged and Convictions for Indictable Offences, by Province, 1958 and 1959

Province or Territory	1958			1959		
	Charges	Convictions		Charges	Convictions	
	No.	No.	p.c.	No.	No.	p.c.
Newfoundland	604	575	95.2	584	551	94.3
Prince Edward Island	138	134	97.1	86	83	96.5
Nova Scotia	1,524	1,353	88.8	1,546	1,362	88.1
New Brunswick	1,006	991	98.5	773	755	97.7
Quebec	7,878	7,127	90.5	7,095	6,252	88.1
Ontario	14,896	12,953	87.0	13,873	12,080	87.1
Manitoba	1,550	1,501	96.8	932	908	97.4
Saskatchewan	1,629	1,558	95.6	1,232	1,165	94.6
Alberta	4,003	3,766	94.1	3,584	3,402	94.9
British Columbia	5,105	4,512	88.4	4,984	4,416	88.6
Yukon and Northwest Territories	82	76	92.7	123	118	95.9
Canada	**38,415**	**34,546**	**89.9**	**34.812**	**31,092**	**89.3**

In 1959, 31.2 p.c. of the convicted persons had no previous conviction, 13.7 p.c. had previously been found guilty of one offence and 35.5 p.c. had two or more earlier convictions. Court records for the other 19.6 p.c. were not obtained.

7.—Persons Charged with Indictable Offences, Disposition of Cases and Recidivism, 1958 and 1959

Item	1958	1959	Item	1958	1959
	No.	No.		No.	No.
Charges	38,415	34,812	Convictions of males	32,512	28,977
Acquittals	3,686	3,533	Convictions of females	2,034	2,115
Disagreement of jury	7	12	First convictions	14,091	9,715
Stay of proceedings	128	124	Second convictions	3,470	4,247
No Bill	11	11	Reiterated convictions	8,209	11,029
Detention because of insanity	37	40	Not given	8,776	6,101

Sentences.—In 1959, 22 p.c. of the persons convicted of indictable offences were fined, 35.2 p.c. were sent to gaol without option of fine, 6.7 p.c. were committed to reformatories and 8.6 p.c. to penitentiaries, and 27.5 p.c. were given suspended sentences with or without probation. Two criminal sexual psychopaths and one habitual criminal were given preventive detention, four persons received a life sentence and 16 were given the death penalty. The proportions in 1959 were much the same as in recent preceding years.

8.—Sentences Given for Indictable Offences, by Province, 1959

Sentence	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Option of fine	217	17	382	189	1,131	2,297	234	287	1,119	944	22	6,839
Gaol—												
Under one year	143	40	346	182	2,070	3,025	207	486	1,164	1,318	73	9,054
One year or over	35	1	8	39	207	629	64	95	374	430	7	1,889
Reformatory	2	—	2	3	129	1,515	37	—	—	386	—	2,074
Penitentiary—												
Under two years	1	—	2	8	11	26	11	3	14	30	—	106
Two years and under five	11	4	176	81	689	597	44	64	180	296	2	2,144
Five years and under ten	2	—	9	16	152	67	6	5	18	44	—	319
Ten years and under fourteen	—	—	1	2	38	12	1	1	5	4	—	64
Fourteen years or over	1	—	—	—	20	15	—	—	1	4	—	41
Life	—	—	—	—	2	1	—	—	1	—	—	4
Death	—	—	—	—	4	5	1	1	2	3	—	16
Suspended sentence without probation	139	21	159	211	1,257	971	178	83	238	360	14	3,631
Suspended sentence with probation	—	—	277	24	542	2,920	125	140	286	597	—	4,911
Totals	**551**	**83**	**1,362**	**755**	**6,252**	**12,080**	**908**	**1,165**	**3,402**	**4,416**	**118**	**31,092**

Court Proceedings.—In 1959, 65 p.c. of the persons tried by a judge and jury were convicted; trials by a judge without a jury brought convictions in 72 p.c. of the cases so tried; trials by a magistrate with consent ended in convictions in 91.1 p.c.; and those by a magistrate who had absolute jurisdiction, in 90.9 p.c. of the cases. Of the persons charged with an indictable offence, 92.1 p.c. were tried by magistrate or juvenile and family courts, 5.4 p.c. in county and district courts and 2.5 p.c. in higher courts.

9.—Method of Trial of Persons Charged with Indictable Crimes, showing Disposition of Cases, by Sex and by Province, 1959

Method of Trial and Sex		Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
By Judge and Jury—													
Conviction	M.	15	—	22	11	132	243	31	28	16	82	3	583
	F.	—	—	1	—	5	11	—	1	—	—	—	18
Acquittal	M.	5	—	11	2	40	113	13	21	3	49	2	259
	F.	—	—	1	1	2	10	—	—	1	3	—	18
Detention because of insanity	M.	—	—	—	—	2	4	—	1	—	—	—	7
	F.	—	—	—	—	—	1	—	—	1	—	—	2
Disagreement of jury	M.	—	—	1	1	—	5	1	2	—	2	—	12
Stay of proceeding	M.	—	—	—	—	2	—	1	—	—	9	—	12
	F.	—	—	—	—	—	—	—	—	—	2	—	2
No Bill	M.	—	—	—	1	—	10	—	—	—	—	—	11

9.—Method of Trial of Persons Charged with Indictable Crimes, showing Disposition of Cases, by Sex and by Province, 1959—concluded

Method of Trial and Sex	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
By a Judge without Jury—												
Conviction.............M.	2	4	44	3	552	274	20	40	178	136	—	1,253
F.	—	—	2	—	14	23	2	—	15	7	—	63
Acquittal.............M.	—	1	3	—	311	82	4	17	23	36	—	477
F.	—	—	—	—	12	6	1	—	2	5	—	26
Stay of proceedings....M.	—	—	—	—	—	—	—	—	5	4	—	9
F.	—	—	—	—	—	—	—	—	1	—	—	1
By a Magistrate with Consent—												
Conviction.............M.	278	33	642	369	2,912	6,512	387	583	1,535	1,945	60	15,256
F.	8	—	29	15	103	387	16	19	129	159	—	865
Acquittal.............M.	11	1	93	5	185	796	1	13	71	159	—	1,335
F.	1	—	7	—	17	88	—	1	5	31	1	151
Detention because of insanity.............M.	—	—	3	1	11	4	—	—	—	1	—	20
F.	—	—	—	—	1	—	—	—	—	—	—	1
Stay of proceedings....M.	—	—	—	—	1	—	—	—	—	49	—	50
F.	—	—	—	—	—	—	—	—	—	13	—	13
By a Magistrate, Absolute Jurisdiction—												
Conviction.............M.	215	45	574	343	2,345	4,147	425	463	1,393	1,884	51	11,885
F.	33	1	48	14	189	483	27	31	136	203	4	1,169
Acquittal.............M.	15	1	63	7	224	613	2	11	63	145	1	1,145
F.	1	—	2	—	26	60	—	1	7	24	1	122
Detention because of insanity.............M.	—	—	—	—	8	1	—	—	—	1	—	10
Stay of proceedings.....M.	—	—	—	—	—	—	1	—	—	25	—	26
F.	—	—	—	—	1	—	—	—	—	10	—	11
Totals, Persons Charged	584	86	1,546	773	7,095	13,873	932	1,232	3,584	4,984	123	31,812
Totals, Persons Convicted..................	551	83	1,362	755	6,252	12,080	908	1,165	3,402	4,416	118	31,092

10.—Persons Charged and Convicted of Indictable Crimes according to Trial Court, by Province, 1958 and 1959

Province and Item	1958					1959				
	Persons Charged and Convicted by—					Persons Charged and Convicted by—				
	Police Magistrate and Municipal Court	Juvenile or Family Court	County Court	Higher Court	Totals	Police Magistrate and Municipal Court	Juvenile or Family Court	County Court	Higher Court	Totals
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland—										
Charged..............	533	59	—	12	604	504	58	2	20	584
Convicted............	513	58	—	4	575	478	56	2	15	551
Prince Edward Island—										
Charged..............	125	—	13	—	138	81	—	5	—	86
Convicted............	124	—	10	—	134	79	—	4	—	83
Nova Scotia—										
Charged..............	1,421	1	50	52	1,524	1,456	5	50	35	1,546
Convicted............	1,277	1	42	33	1,353	1,288	5	47	22	1,362

10.—Persons Charged and Convicted of Indictable Crimes according to Trial Court, by Province, 1958 and 1959—concluded

Province or Territory and Item	1958					1959				
	Persons Charged and Convicted by—					Persons Charged and Convicted by—				
	Police Magistrate and Municipal Court	Juvenile or Family Court	County Court	Higher Court	Totals	Police Magistrate and Municipal Court	Juvenile or Family Court	County Court	Higher Court	Totals
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
New Brunswick—										
Charged	986	1	9	10	1,006	746	8	3	16	773
Convicted	975	1	8	7	991	733	8	3	11	755
Quebec—										
Charged	5,539	1,098	1,099	142	7,878	4,913	1,110	891	181	7,095
Convicted	5,091	1,079	843	114	7,127	4,450	1,099	568	135	6,252
Ontario—										
Charged	14,124	40	354	378	14,896	13,054	37	621	161	13,873
Convicted	12,414	38	264	237	12,953	11,493	36	454	97	12,080
Manitoba—										
Charged	1,318	165	23	44	1,550	623	236	27	46	932
Convicted	1,286	163	18	34	1,501	620	235	22	31	908
Saskatchewan—										
Charged	1,546	—	33	50	1,629	1,118	4	57	53	1,232
Convicted	1,506	—	25	27	1,558	1,092	4	40	29	1,165
Alberta—										
Charged	3,747	—	53	203	4,003	3,338	1	27	218	3,584
Convicted	3,564	—	45	157	3,766	3,192	1	23	186	3,402
British Columbia—										
Charged	4,258	552	158	137	5,105	4,036	613	189	146	4,984
Convicted	3,783	535	121	73	4,512	3,614	577	144	81	4,416
Yukon and Northwest Territories—										
Charged	74	—	4	4	82	118	—	—	5	123
Convicted	73	—	2	1	76	115	—	—	3	118
Canada—										
Charged	**33,671**	**1,916**	**1,796**	**1,032**	**38,415**	**29,987**	**2,072**	**1,872**	**881**	**31,812**
Convicted	**30,606**	**1,875**	**1,378**	**687**	**34,546**	**27,154**	**2,021**	**1,307**	**610**	**31,092**

Subsection 2.—Young Adult Offenders (16-24 Years)

Young men and women from 16 to 24 years of age form 52.8 p.c. of the criminal population who commit indictable offences but they comprise less than 19.7 p.c. of the total population 16 years of age or over. As this age group includes some of the most daring offenders who already may be experienced criminals as well as first offenders likely to be turned from crime by further education and training, it seems worth while to give consideration to offenders in this group as distinct from offenders in the older age groups.

Of the young offenders in 1959, 59.3 p.c. were still under 20 years of age; of those under 20 years of age 73.1 p.c. were tried in three provinces—Ontario 35.8 p.c., Quebec 24 p.c. and British Columbia 13.3 p.c.

11.—Young Adult Offenders, by Age Group, Sex and Province, 1958 and 1959

Year, Age Group and Sex	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1958												
16 - 17 years M.	86	17	226	122	1,266	1,714	178	197	430	671	4	4,911
F.	5	—	8	3	54	57	13	9	24	38	—	211
18 - 19 " M.	84	24	197	129	969	1,618	201	186	393	494	5	4,300
F.	4	1	8	2	32	64	12	12	25	32	—	192
20 - 24 " M.	129	27	298	239	1,600	2,455	279	282	719	830	30	6,888
F.	10	—	11	4	58	160	22	20	55	61	—	401
Totals, 1958	**318**	**69**	**748**	**499**	**3,979**	**6,068**	**705**	**706**	**1,646**	**2,126**	**39**	**16,903**
1959												
16 - 17 years M.	88	12	248	101	1,383	1,685	230	199	441	709	3	5,099
F.	9	—	9	4	50	76	16	6	31	35	—	236
18 - 19 " M.	72	7	196	126	876	1,644	115	173	453	504	13	4,179
F.	4	—	9	6	27	80	5	7	36	45	1	220
20 - 24 " M.	124	20	319	154	1,309	2,387	170	288	725	743	33	6,272
F.	5	—	10	6	53	195	8	12	69	57	1	416
Totals, 1959	**302**	**39**	**791**	**397**	**3,698**	**6,067**	**544**	**685**	**1,755**	**2,093**	**51**	**16,422**

In 1959, seven of the 16 men found guilty of murder, 29 of the 96 convicted of manslaughter and 20 of the 44 found guilty of rape were under 25 years of age; 68.4 p.c. of the men convicted of breaking and entering, extortion and robbery were in that group as well as 55.2 p.c. of those found guilty of offences against property without violence (which include all thefts), 60.2 p.c. of those who maliciously damaged property, 54.7 p.c. of those found carrying offensive weapons and 64.5 p.c. of the prison escapees.

There were 2,115 female offenders in 1959, 872 of them under 25 years of age; 468 of the young offenders were guilty of theft and having in possession. Of the 178 women convicted under the Opium and Narcotic Drug Act, 72 were in the young adult group as were 39 of the 85 convicted of forgery and uttering; all of the 16 female prison escapees were also young women.

12.—Young Adult Offenders Convicted of Indictable Offences, by Class of Offence and Sex, 1958 and 1959

Class of Offence	1958		1959	
	Males	Females	Males	Females
	No.	No.	No.	No.
Criminal Code				
Class I.—Offences against the Person	1,734	58	1,619	60
Abduction and kidnapping	20	1	5	1
Assault, causing bodily harm, common, on police and obstruction	1,269	34	1,186	44
Offences against females[1]	241	3	234	1
Causing death by criminal negligence[2], manslaughter and murder	27	1	36	1
Attempted murder, causing bodily harm and danger	41	6	29	4
Duties tending to preservation of life	1	—	2	2
Other offences against the person	135	13	127	7
Class II.—Offences against Property with Violence	4,565	69	4,327	74
Breaking and entering a place, extortion and robbery	4,565	69	4,327	74

For footnotes, see end of table.

12.—Young Adult Offenders Convicted of Indictable Offences, by Class of Offence and Sex, 1958 and 1959—concluded

Class of Offence	1958		1959	
	Males	Females	Males	Females
	No.	No.	No.	No.
Criminal Code—concluded				
Class III.—Offences against Property without Violence	7,948	500	8,074	536
Fraud and false pretences	365	64	391	65
Having in possession	596	25	663	27
Theft	6,987	411	7,020	444
Class IV.—Malicious Offences against Property	308	5	349	14
Arson and other fires	38	—	46	—
Other interference with property	270	5	303	14
Class V.—Forgery and Other Offences Relating to Currency	317	52	309	39
Forgery and uttering forged documents	314	52	293	39
Offences relating to currency	3	—	16	—
Class VI.—Other Offences	1,162	74	793	77
Criminal negligence in operation of motor vehicles	34	—	31	—
Driving while ability to drive is impaired	314	3	37	1
Driving while intoxicated	19	1	8	—
Gaming, betting and lotteries	21	—	15	1
Keeping bawdy houses	—	22	11	35
Various other offences	774	48	691	40
Totals, Criminal Code	**16,034**	**758**	**15,471**	**800**
Federal Statutes				
Opium and Narcotic Drug Act	59	46	78	72
Other statutes	6	—	1	—
Totals, Federal Statutes	**65**	**46**	**79**	**72**
Grand Totals	**16,099**	**804**	**15,550**	**872**

[1] Includes abortion, indecent assault on female, sexual intercourse and attempt, incest, procuring, rape, attempted rape and seduction. [2] Includes causing death in the operation of a motor vehicle or otherwise.

The sentences meted out to these young people vary somewhat from those given to offenders over 24 years of age. Usually a higher proportion of them are given suspended sentences, put on probation or sent to reformatories and a lower proportion fined or given gaol sentences.

13.—Disposition of Sentences for Indictable Offences, by Sex, 1958 and 1959

Disposition of Sentences	1958				1959			
	16-24 Years		25 Years or Over		16-24 Years		25 Years or Over	
	M.	F.	M.	F.	M.	F.	M.	F.
	No.	No.	No.	No.	No.	No.	No.	No.
Suspended sentence	2,541	173	1,518	261	1,904	171	1,302	254
Probation	2,906	233	1,044	142	3,570	266	916	159
Fine	3,160	144	5,173	457	2,832	150	3,405	452
Gaol	4,711	189	6,531	301	4,685	210	5,769	279
Reformatory	1,509	48	575	33	1,459	56	521	38
Penitentiary	1,266	17	1,562	36	1,093	19	1,505	61
Death	6	—	10	—	7	—	9	—

Through the system of suspended sentence and probation supervising, many young offenders receive another chance to make good, and reformatory training gives others an opportunity to better their employment possibilities. It is interesting to note that 24.2 p.c. of the young male offenders in 1959 were recorded as labourers, indicating that they had no particular skill by which to earn a living; the proportion of male offenders 25 years or over recorded as labourers was 16.6 p.c. Those recorded as students made up 10.1 p.c. of the youths, and 11.7 p.c. were reported as unemployed as compared with 5.2 p.c. of the older men. Approximately three of every four lived in urban centres.

Subsection 3.—Convictions for Summary Conviction Offences

Offences punishable on summary conviction—those not expressly made indictable—include all offences against the Criminal Code, provincial statutes and municipal by-laws. Summary conviction offences are triable by magistrate or justice of the peace under Part XXIV of the Criminal Code or under the provincial summary convictions Acts.

It is debatable how far summary conviction offences are of a criminal nature and whether their increase indicates an increase in crime. Many are breaches of municipal by-laws and contrary to public safety, health and comfort as, for example, parking violations or practising trades without licence, but they do not involve violence, cruelty or serious dishonesty. On the other hand, offences as serious as cruelty to animals and contributing to juvenile delinquency are included under this classification and such indictable offences as common assault and driving with ability impaired may be tried on summary conviction.

Summary convictions increased by 1.6 p.c. from 2,508,976 in 1958 to 2,548,909 in 1959. Increases were shown in Nova Scotia, Quebec, Manitoba, Saskatchewan, Alberta and British Columbia.

14.—Convictions for Summary Conviction Offences, by Province, 1950-59

NOTE.—Figures for the years ended Sept. 30, 1900-49 are given in the corresponding table of previous Year Books beginning with the 1933 edition.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1950[1]...	..	2,095	13,137	21,732	280,868	617,565	79,079	22,717	28,344	117,729	553	172	1,183,991
1951....	5,022	2,195	14,850	25,660	267,648	671,893	118,217	22,467	39,956	139,304	950	304	1,308,466
1952....	6,191	2,578	14,977	31,905	312,892	819,253	135,034	31,618	50,443	158,967	1,342	507	1,565,707
1953....	6,315	2,529	17,292	33,308	352,009	960,764	135,757	34,764	57,463	161,382	1,432	607	1,763,622
1954....	7,027	2,958	18,096	35,003	441,875	1,066,039	141,290	46,343	56,408	160,707	1,339	482	1,977,567
1955....	8,585	3,534	19,459	38,560	444,143	1,224,654	110,632	46,817	58,757	192,589	..	46	2,147,776
1956....	6,899	4,396	25,896	34,834	495,660	1,393,510	56,760	63,649	71,193	246,595	1,464	874	2,401,730
1957....	15,441	4,085	22,805	46,127	486,420	1,381,336	59,689	93,127	88,376	265,908	1,812	1,636	2,466,762
1958....	14,120	4,172	24,967	49,815	506,000	1,404,810	67,353	59,242	97,136	278,123	1,686	1,552	2,508,976
1959....	9,707	4,019	26,058	42,434	606,168	1,303,346	77,461	65,101	104,448	307,174	1,573	1,420	2,548,909

[1] For the 12 months ended Sept. 30, 1950; statistics for October-December 1950 are given in DBS report *Statistics of Criminal and Other Offences* (Catalogue No. 85-201).

In considering statistics of summary convictions it should be remembered that such convictions are greatly influenced by the customs of the people and by the application and degree of enforcement of municipal regulations. These differ from place to place and from year to year and affect summary conviction offences more than they do indictable offences.

In 1959 increases appeared in convictions under the Criminal Code, federal statutes, and municipal by-laws. Convictions for breaches of parking regulations under provincial statutes and municipal by-laws rose by 4.7 p.c.

15.—Convictions for Summary Conviction Offences, by Type, 1958 and 1959

Type of Offence	1958	1959	Increase or Decrease 1958-59
	No.	No.	p.c.
Criminal Code	**72,421**	**74,716**	**+ 3.2**
Attempts, conspiracies, accessories, counselling	127	77	−39.4
Attempt to commit suicide	267	189	−29.2
Bawdy house	689	527	−23.5
Causing disturbance by being drunk	2,686	2,849	+ 6.1
Common assault	6,382	5,874	− 8.0
Communicating venereal disease	98	47	−52.0
Contempt of court	19	23	+21.1
Corrupting morals	121	101	−16.5
Cruelty to animals	105	86	−18.1
Damage not exceeding $50 and other interference with property	3,072	3,083	+ 0.4
Disorderly conduct	13,721	13,400	− 2.3
Duty of persons to provide necessaries	1,472	1,714	+16.4
Duty to safeguard dangerous places	192	243	+26.6
Fraudulently obtaining food or lodging	864	935	+ 8.2
Fraudulently obtaining transportation	70	106	+51.4
Gaming, betting, lotteries	1,252	1,345	+ 7.4
Injuring bird or animal other than cattle	38	67	+76.3
Intimidation	184	267	+45.1
Motor Vehicle—			
Criminal negligence in operation of motor vehicle	802	987	+23.1
Driving while ability to drive is impaired	17,294	18,916	+ 9.4
Driving while disqualified	3,784	4,379	+15.7
Driving while intoxicated	1,959	1,791	− 8.6
Failing to stop at scene of accident	2,667	3,478	+30.4
Motor vehicle equipped with smoke screen	30	38	+26.7
Taking motor vehicle without consent	1,321	1,271	− 3.8
Offensive weapons	961	837	−12.9
Personating peace officer	78	68	−12.8
Recognizance, breach of	226	1,195	+42.8
Vagrancy	6,911	6,883	− 0.4
Other Criminal Code	5,029	3,940	−21.7
Federal Statutes	**30,283**	**31,780**	**+ 4.9**
Customs	205	136	−33.7
Excise	893	733	−17.9
Fisheries	905	634	−29.9
Food and Drugs and Inspection and Sales	234	107	−54.3
Harbour Board and Merchant Seamen's	377	377	—
Income Tax	7,249	7,713	+ 6.4
Indian—			
Intoxication	8,355	8,700	+ 4.1
Other	2,631	3,396	+29.3
Juvenile Delinquents—			
Adults who contribute to delinquency	2,519	2,603	+ 3.3
Incorrigibility	235	523	+122.6
Inducing child to leave home, etc.	40	67	+67.5
Sexual immorality	—	309	...
Lord's Day	233	63	−73.0
Opium and Narcotic Drug	42	66	+57.1
Railway	1,042	749	−28.1
Unemployment Insurance	2,482	2,897	+16.7
Weights and Measures	42	32	−23.8
Other federal statutes	2,799	2,675	− 4.4

15.—Convictions for Summary Conviction Offences, by Type, 1958 and 1959—concluded

Type of Offence	1958	1959	Increase or Decrease 1958-59
	No.	No.	p.c.
Provincial Statutes	**708,134**	**665,920**	− 6.0
Children of Unmarried Parents	634	588	− 7.3
Deserted Wives and Children's Maintenance	3,925	4,057	+ 3.4
Game and Fisheries	6,249	5,700	− 8.8
Highway Traffic—			
Driving without due care and attention	41,592	33,820	−18.7
Other traffic	496,926	468,584	− 5.7
Liquor Control—			
Intoxication	80,645	76,510	− 5.1
Other	52,157	53,988	+ 3.5
Master and Servant	924	861	− 6.8
Medical, Dentistry and Pharmacy	144	144	—
Mental Diseases	1,362	1,407	+ 4.1
Prairie and Forest Fire Prevention	399	227	−43.1
Protection of Children	2,281	2,565	+12.5
Public Health	171	158	− 7.6
School Laws	336	519	+154.5
Other provincial statutes	20,389	16,792	−17.6
Municipal By-laws	**198,098**	**206,323**	+ 4.2
Intoxication	15,304	17,439	+14.0
Traffic	144,652	153,137	+ 5.9
Other	38,142	35,747	− 6.3
Prohibited Parking	**1,600,040**	**1,570,170**	+ 4.7
Totals, Convictions	**2,508,976**	**2,518,909**	+ 1.6

16.—Convictions for Breaches of Traffic Regulations, by Province, 1950-59

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1950[1]	..	366	4,265	11,909	227,857	508,010	67,832	12.362	13,772	92,038	138	938,549
1951	1,773	580	5,802	15,641	215,222	570.895	106,262	13,325	22,923	112,738	265	1,065.426
1952	2,565	765	5,109	20,358	266,835	714,810	122,647	19,749	25,693	132,123	368	1,311,022
1953	2,719	760	6,014	21,296	309,064	857,117	122,370	21,957	30,846	133,295	493	1,505,931
1954	3,048	1,214	7,040	21,804	390,701	954,749	125,346	32,666	28,690	120,281	272	1,685,811
1955	3,977	1,637	7,982	28,080	390,502	1,102,183	92,514	32,667	29,463	148,809	..	1,837,814
1956	3,454	2,199	12,167	24,964	452,882	1,285,303	42,998	48,356	45,031	210,041	342	2,127,737
1957	10,629	1,585	11,493	35,004	438,331	1,268,616	41,646	77,808	55,238	227,533	298	2,168,181
1958	9,810	1,837	14,037	37,148	451,730	1,293,958	50,942	45,777	62,708	241,298	501	2,209,746
1959	5,514	1,995	14,752	31,631	556,720	1,193,260	61,545	49,983	71,012	268,380	508	2,255,300

[1] See footnote to Table 14, p. 318.

For the year 1959, Ontario, with 39.3 p.c. of the registrations of motor vehicles in Canada, had 52.9 p.c. of the total convictions for breaches of traffic regulations; Quebec in the same year had 20.7 p.c. of the registered vehicles and 24.7 p.c. of the convictions. In interpreting the figures in this way, however, it should be pointed out that traffic regulations are by no means uniform throughout Canada and no account is taken of the differences in the degree of urbanization in the provinces. These two provinces have large urban centres but in provinces with lower degrees of urbanization, such as the Atlantic Provinces, Saskatchewan and Alberta, convictions are lower when considered in proportion to the number of motor vehicles registered.

Convictions for Drunkenness and Offences against the Liquor Acts.—In considering these convictions it should be noted that the same person may and often does appear before the courts on such charges more than once within a year and that the number of convictions may thus be well above the number of persons convicted.

17.—Convictions for Drunkenness, by Province, 1950-59

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1950[1]......	..	907	3,931	4,980	10,942	35,356	2,984	1,503	3,849	11,180	240	63	75,935
1951.......	844	759	4,432	6,036	10,222	38,577	3,098	1,915	4,691	13,007	213	104	83,898
1952.......	786	1,049	5,457	6,550	10,702	36,344	3,272	2,264	5,141	13,479	462	176	85,682
1953.......	1,045	1,007	6,378	6,712	9,103	38,108	3,729	2,728	7,753	13,987	403	229	91,182
1954.......	866	966	5,941	6,957	10,663	38,461	3,892	2,670	7,039	16,637	637	194	94,923
1955.......	1,015	1,033	6,527	6,067	9,786	39,465	3,616	3,147	6,275	16,214	..	32	93,177
1956.......	622	1,181	8,953	6,307	4,843	41,237	4,726	4,441	8,833	19,485	690	494	101,812
1957.......	1,706	1,193	7,263	6,941	5,499	43,181	5,342	5,116	9,770	21,717	1,021	1,113	110,162
1958.......	1,156	1,231	6,254	7,255	7,932	41,550	5,531	4,441	9,634	20,511	692	803	106,990
1959.......	1,123	1,291	6,443	6,229	8,332	41,251	5,814	5,035	8,851	19,780	624	725	105,498

[1] See footnote to Table 14, p. 318.

There is general interest in the relation of alcoholism to crime but, when examining statistics to support the assumption that some crimes are associated with the consumption of liquor, it should be observed that accurate interpretation would necessitate allowance for population variables such as age and sex distribution and other classifications according to social and economic status, etc.

18.—Convictions for Offences against the Liquor Acts, by Province, 1950-59

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1950[1]......	..	268	2,192	1,172	3,121	15,761	1,980	2,478	3,504	1,164	64	34	31,738
1951.......	371	266	2,273	818	1,467	14,104	1,961	2,005	3,757	1,251	88	44	28,405
1952.......	475	284	2,236	1,172	777	15,050	2,314	2,527	6,782	1,381	243	94	33,335
1953.......	441	280	2,124	1,221	1,304	17,137	2,013	3,146	5,445	1,508	285	68	34,972
1954......	411	368	2,285	979	1,203	18,351	2,501	3,484	5,313	1,557	251	38	36,741
1955.......	571	464	2,056	1,014	1,322	18,256	2,102	3,480	5,579	1,545	..	2	36,391
1956.......	431	472	2,027	1,032	2,783	22,430	2,886	4,539	6,867	2,628	116	79	46,290
1957.......	546	467	1,893	1,661	1,670	22,527	4,513	4,286	8,961	2,622	62	72	49,280
1958.......	583	522	2,049	2,322	3,206	24,052	4,097	3,210	9,281	2,576	122	137	52,157
1959.......	481	369	2,143	2,201	2,310	24,698	3,729	4,304	10,781	2,723	186	63	53,988

[1] See footnote to Table 14, p. 318.

Convictions of Females.—The number of convictions against females for summary conviction offences was greater in 1959 than in 1958 by 1.9 p.c. Newfoundland, Saskatchewan, Ontario and Alberta recorded decreases of 36.5 p.c., 23.3 p.c., 7.8 p.c. and 0.4 p.c., respectively. Traffic offences were the cause of 85.8 p.c. of all summary convictions against women in 1959; such convictions rose by 0.8 p.c. as compared with 1958.

19.—Convictions of Females for Summary Conviction Offences, by Province, 1955-59

Province or Territory	Numbers of Convictions					Percentages of Convictions of Females to Total Convictions				
	1955	1956	1957	1958	1959	1955	1956	1957	1958	1959
Newfoundland	550	487	1,054	978	621	6.4	7.1	6.8	6.9	6.4
Prince Edward Island	46	103	72	50	68	1.3	2.3	1.8	1.2	1.7
Nova Scotia	438	873	506	595	640	2.3	3.4	2.2	2.4	2.5
New Brunswick	439	554	583	693	736	1.2	1.6	1.3	1.4	1.7
Quebec	8,590	14,133	6,021	6,677	16,118	1.9	2.9	1.2	1.3	2.7
Ontario	77,321	88,237	91,649	95,499	88,035	6.3	6.3	6.6	6.8	6.8
Manitoba	4,853	2,367	2,568	3,316	3,693	4.4	4.2	4.3	4.9	4.8
Saskatchewan	847	1,850	1,372	1,733	1,329	1.8	2.9	1.3	2.9	2.0
Alberta	1,604	2,218	3,391	3,438	3,425	2.7	3.1	3.8	3.5	3.3
British Columbia	11,149	14,144	14,711	22,599	23,455	5.8	5.7	5.5	8.1	7.6
Yukon and N.W.T.	9	234	364	341	411	19.6	10.0	10.6	10.5	13.7
Canada	**105,846**	**125,200**	**122,291**	**135,919**	**138,531**	**4.9**	**5.2**	**5.0**	**5.4**	**5.4**

Subsection 4.—Appeals

The disposition of appeals dealt with by the Supreme Court of Canada and the provincial supreme courts in criminal cases is shown by province for 1959 in Table **20**; the disposition of those dealt with by county and district courts against summary convictions is given in Table **21**.

20.—Appeals in Indictable Cases, by Province, 1959

Province or Court	Appeals Disposed of by Courts	Crown Appeal					Appeal of Accused					
		From Acquittal			From Sentence		From Conviction				From Sentence	
		Dismissed	New Trial	Conviction	Dismissed	Varied	Dismissed	Acquitted	New Trial	Substituted Verdict	Dismissed	Varied
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland	4	—	—	—	—	—	1	1	—	—	—	2
P. E. Island	1	—	—	—	—	—	1	—	—	—	—	—
Nova Scotia	16	—	—	1	—	—	6	—	1	—	8	—
New Brunswick	16	—	—	—	—	2	5	1	—	—	1	7
Quebec	59	—	—	—	—	4	28	12	4	—	7	4
Ontario	368	—	—	—	—	9	138	27	6	3	168	17
Manitoba	55	6	1	—	—	7	9	—	—	1	20	11
Saskatchewan	105	1	—	—	—	2	13	5	1	1	46	36
Alberta	259	—	7	4	5	23	46	17	—	—	77	80
British Columbia	415	7	—	3	1	8	117	9	13	—	166	91
Supreme Court of Canada	13	—	—	—	—	—	11	1	—	—	—	1
Totals	**1,311**	**14**	**8**	**8**	**6**	**55**	**375**	**73**	**25**	**5**	**493**	**249**

21.—Appeals in Summary Conviction Cases, by Province, 1959

Province or Territory	Appeals Disposed of by Courts	Appeal of Informant				Appeal of Accused				
		From Acquittal		From Sentence		From Conviction			From Sentence	
		Dismissed	Conviction	Dismissed	Varied	Dismissed	Acquitted	Substituted Verdict	Dismissed	Varied
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland	3	—	—	—	—	3	—	—	—	—
P. E. Island	22	—	—	—	—	13	1	1	—	7
Nova Scotia	90	10	9	—	—	48	20	1	2	—
New Brunswick	21	4	5	—	—	7	5	—	—	—
Quebec	101	2	—	—	—	63	14	4	13	5
Ontario	457	4	16	—	—	183	113	13	105	23
Manitoba	41	—	1	—	—	21	18	1	—	—
Saskatchewan	62	5	5	—	1	23	16	7	3	2
Alberta	217	18	7	2	2	87	60	5	12	24
British Columbia	286	15	27	2	4	103	95	3	17	20
Yukon Territory	8	1	1	—	1	2	3	—	—	—
Totals	**1,308**	**59**	**71**	**4**	**8**	**553**	**345**	**35**	**152**	**81**

Section 3.—Juvenile Delinquents

The Juvenile Delinquents Act defines a child as "any boy or girl apparently or actually under the age of 16 years". Provision is made, however, by which the Governor General in Council may proclaim that in a province the definition of a child be a "person under the age of 18 years". This has been done in British Columbia, Manitoba and Quebec. Newfoundland considers a juvenile to be a girl or a boy under 17 years of age. For uniformity the figures relating to juveniles compiled by the Dominion Bureau of Statistics refer to the younger ages of under 16 years only and deal primarily with cases disposed of by the courts.

The fact that juvenile court statistics furnish the most comprehensive figures collected on a country-wide basis makes it important that their possibilities and limitations be understood. This Section gives an account of juvenile delinquency in Canada from the viewpoint of legal action taken, for in the eyes of the law a *child is a delinquent only when he or she is adjudged before the court to have committed a delinquency.* To many people the term 'juvenile delinquent' has a broader interpretation but that adopted in this Section does not include those boys and girls whose misdemeanours have not been reported to the courts nor those given the necessary advice and aid by their parents, their school, the police or a child care agency. Moreover it does not include those cases that are handled unofficially by the court, where the judge or probation officer makes an adjustment without filing a legal record of the offence. There is a growing tendency toward following this practice and thus keeping children's names from court records.

These statistics represent cases of delinquency reported to the courts, from the most trivial infractions to the most serious—that of murder. The number of cases brought before the courts is influenced by such factors as personnel and facilities of the court, community interest in and understanding of the function of a juvenile court, and by variations in the policies of the courts in the disposition of cases. As more courts are established the additional returns may exaggerate an apparent increase in delinquency or may underestimate a decrease. In some communities the juvenile court is the only available agency to provide services to children; in others there are well established agencies serving children, of which the juvenile court is only one.

It should be noted, too, that the total figures do not represent the actual number of children charged and found guilty but rather tend to exaggerate them, for a child referred to the court more than once during a year for different delinquencies is counted as a different case each time (see p. 330). Neither do the figures represent the number of delinquencies committed by delinquents because when a child is charged with more than one delinquency at a hearing only the most serious delinquency is counted.

Reports of juvenile delinquents were received in 1959 from 143 of the 169 judicial districts. Nine of these had no cases to report. Separate reports were received in 1959 from 195 incorporated urban centres of 4,000 or more population.

Juveniles brought before the Courts.—The number of juveniles brought before the courts in 1959 was 13,329, an increase of 1.5 p.c. over 1958. Saskatchewan and Prince Edward Island showed the greatest percentage increases among the provinces.

22.—Juveniles brought before the Courts, by Province, 1955-59

Province or Territory	1955	1956	1957	1958	1959	Percentage Change, 1958-59
	No.	No.	No.	No.	No.	
Newfoundland	269	368	319	354	274	−22.6
Prince Edward Island	31	48	36	26	42	+61.5
Nova Scotia	576	524	581	780	723	− 7.3
New Brunswick	210	319	341	453	371	−18.1
Quebec	1,323	1,634	2,436	2,434	2,504	+ 2.9
Ontario	3,605	4,462	4,861	5,263	5,355	+ 1.7
Manitoba	455	676	792	891	754	−15.4
Saskatchewan	58	47	29	88	198	+125.0
Alberta	602	756	824	985	980	+ 0.5
British Columbia	1,058	1,475	1,705	1,850	2,093	+13.1
Yukon Territory	—	1	—	—	35	+100.0
Northwest Territories	—	5	4	10	—	−100.0
Canada	**8,187**	**10,315**	**11,928**	**13,134**	**13,329**	**+ 1.5**

23.—Percentage Change in the Number of Boys and Girls brought before the Courts, 1950-59

Year	Percentage Change from Preceding Year			Percentage Change from 1949		
	Boys' Cases	Girls' Cases	All Cases	Boys' Cases	Girls' Cases	All Cases
1950	+ 2.9	+11.8	+ 3.8	+ 2.9	+11.8	+ 3.8
1951[1]	+ 3.9	− 5.3	+ 3.0	+ 7.0	+ 5.9	+ 6.9
1952	− 5.0	+ 4.5	− 4.1	+ 1.6	+10.7	+ 2.5
1953	+ 8.3	+11.0	+ 8.5	+10.0	+22.8	+11.2
1954	− 0.6	− 4.2	− 1.0	+ 9.3	+17.6	+10.1
1955	+ 3.3	+25.9	+ 5.6	+13.0	+48.1	+16.3
1956	+26.9	+19.4	+26.0	+43.4	+76.8	+46.6
1957	+14.9	+21.0	+15.6	+64.8	+113.9	+69.5
1958	+10.4	+ 8.3	+10.1	+81.8	+131.7	+86.6
1959	+ 2.4	− 5.1	+ 1.5	+86.2	+119.8	+89.4

[1] Newfoundland included from 1951.

Children Adjudged Delinquent.—Over a period of ten years it has been found that between 80 and 90 p.c. of the children brought before the courts each year have been adjudged delinquent. The number of delinquents in 1959 was 11,686, an increase of 2.6 p.c. over 1958. The major increases in 1959 were shown in British Columbia and Quebec.

24.—Juvenile Delinquents, by Province, 1950-59

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1950....	..	10	351	258	1,369	3,056	400	76	204	688	6	6,418
1951....	175	52	483	261	1,180	3,024	347	64	242	815	1	6,644
1952....	215	29	356	267	628	2,889	409	81	317	877	—	6,068
1953....	196	33	443	235	773	2,975	360	49	357	952	4	6,377
1954....	218	43	440	224	678	2,945	341	59	428	956	—	6,332
1955....	254	30	390	202	1,040	3,138	401	57	535	978	—	7,025
1956....	336	48	412	311	1,184	3,945	593	44	715	1,391	6	8,985
1957....	301	35	492	324	1,351	4,051	708	26	766	1,621	4	9,679
1958....	343	25	676	431	2,229[1]	4,108	790	85	906	1,788	10	11,391[1]
1959....	262	42	623	355	2,410[1]	4,199	629	182	911	2,038	35	11,686[1]

[1] Includes 956 cases in 1958 and 35 cases in 1959 "adjourned *sine die*", compiled for statistical purposes as juvenile delinquents.

Delinquencies.—Of all complaints against boys resulting in court appearance in 1959, 80.9 p.c. were under the Criminal Code, 4.5 p.c. under federal statutes, 8.9 p.c. under provincial statutes and 5.7 p.c. under municipal by-laws. Of the 8,418 delinquent boys' cases under the Criminal Code, 50.6 p.c. were for thieving and having in possession, 27.9 p.c. for breaking and entering and robbery and 11 p.c. for wilful acts in respect of certain property. Only 3 p.c. of the boys were guilty of delinquencies against the person and 46.8 p.c. of these, of common assault.

Of the girls' cases resulting in court appearance, 40.6 p.c. were under the Criminal Code, 41.2 p.c. under federal statutes, 15.8 p.c. under provincial statutes and 2.4 p.c. under municipal by-laws. Of the 494 girls' committals under the Criminal Code, 53 p.c. were adjudged to be delinquent for theft and having in possession. There were 551 girls found guilty under federal statutes. Incorrigibility and sexual immorality accounted, respectively, for 59.3 p.c. and 31.2 p.c. of them.

25.—Juvenile Delinquents by Group of Offence, and Ratio per 100,000 Population 7-16 Years of Age, 1950-59

Year	Delinquencies against the Person		Delinquencies against Property with Violence		Delinquencies against Property without Violence		Wilful and Forbidden Acts in respect of Certain Property		Forgery and Delinquencies relating to Currency		Other Delinquencies		Total Convictions	
	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population
1950.......	151	7	1,337	65	2,394	116	667	32	16	1	1,853	90	6,418	311
1951[1]......	188	9	1,542	72	2,563	119	765	36	20	1	1,566	73	6,644	310
1952.......	172	8	1,456	65	2,496	112	633	28	25	1	1,286	58	6,068	272
1953.......	169	7	1,416	61	2,415	103	770	33	19	1	1,588	68	6,377	273
1954.......	184	7	1,444	59	2,489	102	673	28	32	1	1,510	62	6,332	259
1955.......	181	7	1,548	61	2,767	108	629	25	29	1	1,871	73	7,025	275
1956.......	250	9	1,888	69	3,572	131	839	31	39	1	2,397	88	8,985	329
1957.......	254	9	2,005	70	3,764	131	994	35	28	1	2,634	92	9,679	338
1958.......	346	12	2,268	76	4,436	148	985	33	36	1	3,320	111	11,391	381
1959.......	265	9	2,408	78	4,748	153	952	31	27	[2]	3,286	106	11,686	377

[1] Newfoundland included from 1951.

[2] Less than one per 100,000 population.

26.—Juvenile Delinquents classified by Type of Delinquency, 1955-59

Delinquency	1955	1956	1957	1958	1959
	No.	No.	No.	No.	No.
Manslaughter and murder and causing death by criminal negligence	2	1	1	2	1
Murder, attempt	—	—	1	—	1
Rape and attempt, sexual intercourse and incest	3	4	5	6	4
Indecent assault (male and female)	39	26	63	75	66
Assault, causing bodily harm and danger	12	49	38	17	25
Common assault	71	115	115	214	127
Interfering with transportation facilities	3	12	1	3	3
Other offences against the person	51	43	30	29	38
Breaking and entering a place	1,522	1,849	1,970	2,239	2,375
Robbery and extortion	26	39	35	29	32
Theft and having in possession	2,643	3,389	3,566	4,223	4,517
False pretences and fraud and corruption	26	14	24	19	24
Arson	15	33	83	58	55
Other interference with property	614	806	911	927	897
Forgery and delinquencies relating to currency	29	39	28	36	27
Incorrigibility and vagrancy	533	586	633	813	776
Immorality	223	211	197	253	267
Various other delinquencies	1,213	1,769	1,978	2,448	2,451
Totals	**7,025**	**8,985**	**9,679**	**11,391**	**11,686**

Sex and Age.—Juvenile delinquents are predominantly boys. The proportion for all offences in 1959 was approximately one girl to eight boys, a ratio that has remained much the same over a long period. Juveniles of 13 to 15 years of age comprised the majority of delinquents in 1959—75.5 p.c. of the boys and 88.3 p.c. of the girls. However, 307 boys and 16 girls (2.8 p.c. of the children) were under 10 years of age.

27.—Percentages of Delinquent Boys and Girls, by Age Group, 1958 and 1959

Age Group	1958			1959		
	Boys	Girls	Both Sexes	Boys	Girls	Both Sexes
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
7 - 12 years	23.0	11.6	21.7	24.0	11.2	22.6
13 - 15 years	76.7	88.1	78.0	75.5	88.3	76.9
Not given	0.3	0.3	0.3	0.5	0.5	0.5
Totals	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

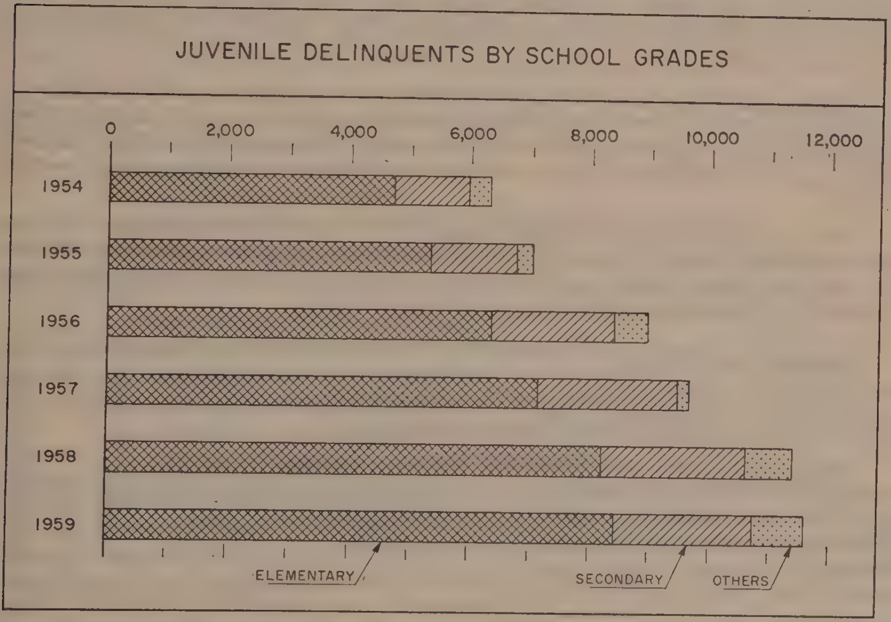
Education and Employment.—Many causes contribute to backwardness in school work. The retarding influence may be illness, over-crowding in the home, disturbed family situations or dull mentality. Presuming that six years is the usual age for entering the first grade, 44.5 p.c. of the boys and girls in 1959 were reported to be two or more years below the normal grade for their age and 3.2 p.c. of the boys and girls were a year or more above it.

Nearly three-fifths (55.6 p.c.) of the boys and 44.5 p.c. of the girls had attained grade 7 at the time of delinquency. The majority of boys and girls who had left school had reached grades 6 to 9. Some high school education had been achieved by 20.0 p.c. of the boys and girls.

28.—Age, Sex and School Grade of Delinquent Boys and Girls, 1959

(B=Boys; G=Girls)

Age	School Grades																Total Delinquents	
	Elementary										Secondary		Auxiliary		Not Given			
	1-4		5		6		7		8									
	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
7 years..........	17	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	19	—
8 "	76	6	—	1	—	—	—	—	—	—	—	—	—	—	8	1	84	8
9 "	182	8	9	—	2	—	—	—	—	—	—	—	—	—	11	—	204	8
10 "	243	17	110	2	17	2	2	—	—	—	—	—	1	—	29	3	402	24
11 "	231	9	219	13	137	2	22	4	2	1	—	—	4	—	44	1	659	30
12 "	182	5	229	10	323	22	253	31	57	1	4	—	12	—	76	3	1,136	72
13 "	123	11	191	16	353	40	490	56	321	43	52	8	15	1	94	15	1,639	190
14 "	88	10	179	18	329	43	631	71	632	116	513	107	23	4	146	35	2,541	404
15 "	70	12	151	29	288	54	639	71	794	99	1,432	217	36	7	277	35	3,687	524
Not given........	4	—	—	—	1	—	1	1	2	—	3	—	1	—	37	5	49	6
Totals..........	**1,216**	**78**	**1,088**	**89**	**1,450**	**163**	**2,038**	**234**	**1,808**	**260**	**2,004**	**332**	**93**	**12**	**723**	**98**	**10,420**	**1,266**



JUVENILE DELINQUENTS BY SCHOOL GRADES

In 1959, 11.5 p.c. of the delinquent boys and 15.9 p.c. of the delinquent girls were not attending school. At the time of leaving school their ages ranged from 9 to 15 years, the majority being 14 to 15 years. Of the delinquent boys who had left school, 33.9 p.c. were unemployed. The largest group of wage earners (91) were in occupations concerned with transportation, such as messengers, helpers on milk delivery routes, truck drivers' assistants, etc. More than half of the girls were idle after leaving school. Factory work and domestic and personal services were the main occupations of those employed.

Birthplaces of Juvenile Delinquents and their Parents.—Canada was the country of birth of 89.7 p.c. of the juvenile delinquents in 1959 (the place of birth was not recorded in 3.4 p.c. of the cases); 6.8 p.c. were born in the British Isles, Europe, the United States, and Asia. Ontario was the province of residence of 46.9 p.c. of those born outside Canada.

Both parents of 75.0 p.c. of the delinquent children in 1959 were born in Canada and another 10.9 p.c. had one parent born in this country. To evaluate these figures, comparison should be made of the population ratio of children from 7 to 15 years of age whose parents were Canadian-born with those whose parents were born elsewhere.

Home Circumstances.—The type of home in which he lives and the amount and quality of supervision he receives are important factors in a child's behaviour. The statistics of the marital status of the parents and the place and type of residence of the child reflect home conditions and are worth recording as possible reasons for social or emotional maladjustment. The parents of 76.7 p.c. of the delinquent children were reported to be living together in 1959 but a home broken by separated parents, divorce or death was the background of 18.9 p.c. of the delinquent boys and girls. The mothers of 13.0 p.c. of the juvenile delinquents were employed other than in the home and the mothers of another 2.1 p.c. were dead. The fathers in 6.1 p.c. of the cases were deceased. Of every five juveniles who appeared in court, four were urban residents; 90.3 p.c. were living in their own homes at the time they got into difficulties; 3.6 p.c. of them were in foster homes, with either a relative or some other person; and institutions were the homes of 1.8 p.c. of them.

Sources of Complaint.—The police were the complainants in the majority of juvenile cases, 84.3 p.c. of the boys having been charged by them. Probation officers and parents were responsible for 4.6 p.c. and 2.0 p.c., respectively, of those charged. School authorities referred 1.7 p.c. of the boys to the courts and social agencies another 0.5 p.c.

The proportion (61.4 p.c.) of girls charged by the police was considerably less than the proportion of boys so charged. Parents made more use of the courts for girls than for boys (17.5 p.c.). School authorities laid complaints in 3.6 p.c., probation officers in 8.0 p.c. and social agencies in 3.6 p.c. of the girls' cases.

Disposition of Cases.—In 1959, 45.1 p.c. of the children's cases were heard within four days of the charge and 61.4 p.c. within nine days. However, 9 p.c. of them had to wait at least two weeks and 9.6 p.c. waited one month or more before the first hearing. These waiting periods may be explained in various ways.

Some county courts sit only twice or even once a month. Hearings may be deferred because of sickness in the family, school examinations, stormy weather or long distances. The chief cause for delay, however, is the time it takes to investigate the facts properly. The probation officer, and frequently there is only one to a court, has to find out what occurred at the time of the delinquency; he must get in touch with the parents and the school, learn something of the home situation, perhaps arrange medical or psychiatric examinations and explore community resources. The disadvantage of a long waiting period is outweighed by the assistance the court receives in deciding the form of treatment best suited to the child's needs and the type of care that will be the most economical for the community. For these intervening days or weeks most children are left in their own homes while a minority are placed in detention homes and, in the long run, whether the effect of the waiting period is good or bad is determined by the care given the youngster during that time.

Juvenile court judges heard 95.9 p.c. and magistrates 4.0 p.c. of the juvenile cases before the courts. The remainder were heard by justices of the peace. The proportion of those declared delinquent (97.6 p.c.) in the magistrates' courts was greater than in the juvenile courts (87.3 p.c.). In the former courts, 1.9 p.c. of the cases were dismissed while in the juvenile courts only 2.8 p.c. were dismissed but 9.9 p.c. were adjourned *sine die*.

Some courts consider children whose hearings are adjourned *sine die* as delinquent while others do not; for the purpose of uniformity, the latter point of view is maintained by the Dominion Bureau of Statistics. In assessing the total problem of juvenile delinquency, however, cases adjourned *sine die* have to be taken into account for, when the proportion of cases dealt with in this way increases, the proportion of those declared delinquent declines.

29.—Juveniles before the Courts, Dismissed and Delinquent, 1955-59

Item	1955		1956		1957		1958		1959	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
Before the Courts	**8,187**	**100.0**	**10,315**	**100.0**	**11,928**	**100.0**	**13,134**	**100.0**	**13,329**	**100.0**
Dismissed	207	2.5	221	2.1	331	2.8	416	3.2	370	2.8
Adjourned *sine die*	955	11.7	1,109	10.8	1,918	16.1	1,327	10.1	1,273	9.5
Delinquent	7,025	85.8	8,985	87.1	9,679	81.1	11,391	86.7	11,686	87.7

Sentences for delinquent boys usually differ somewhat from those for girls. In 1959 the proportion of boys put on probation was 56.1 p.c. and of girls 57.0 p.c. Fines or restitution were meted out to 16.8 p.c. of the boys but to only 4.6 p.c. of the girls. This is because damage to property, for which restitution seems a reasonable adjustment, is committed relatively more often by boys than by girls. A much larger proportion of the girls (28.1 p.c.) than the boys (12.7 p.c.) were sent to training schools. Final disposition of case was postponed for 8.3 p.c. of the girls and for 12.2 p.c. of the boys.

30.—Disposition of Delinquents, by Type of Sentence, 1950-59

Year	Reprimanded		Probation of Court		Protection of Parents		Fined or Made Restitution		Detained Indefinitely		Sent to Training School		Final Disposition Suspended		Corporal Punishment		Mental Hospital	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
1950	354	5.5	2,392	37.3	94	1.4	1,148	17.9	26	0.4	1,144	17.8	1,257	19.6	3	0.1	..	..
1951[1]	309	4.6	2,313	34.8	154	2.3	1,433	21.6	45	0.7	1,141	17.2	1,247	18.7	2	0.1	..	..
1952	243	4.0	2,412	39.8	148	2.4	1,015	16.7	1	--	1,152	19.0	1,095	18.1	2	--	..	..
1953	227	3.6	2,620	41.1	186	2.9	1,147	18.0	28	0.4	1,107	17.4	1,062	16.6	—	—	..	..
1954	199	3.1	2,595	41.0	174	2.8	1,095	17.3	27	0.4	1,121	17.7	1,119	17.7	2	--	..	..
1955	181	2.6	3,067	43.7	365	5.2	1,064	15.1	50	0.7	1,180	16.8	1,118	15.9	—	—	..	..
1956	359	4.0	3,155	35.1	404	4.5	2,015	22.4	30	0.3	1,440	16.0	1,577	17.6	—	—	5	0.1
1957	460	4.7	3,822	39.5	300	3.1	2,261	23.4	63	0.7	1,563	16.1	1,202	12.4	1	--	7	0.1
1958	504	4.4	5,728	50.3	294	2.6	1,624	14.3	13	0.1	1,822	16.0	1,389	12.2	3	--	14	0.1
1959	236	2.0	6,151	52.6	412	3.5	1,810	15.5	9	0.1	1,678	14.4	1,381	11.8	—	—	9	0.1

[1] Newfoundland included from 1951.

Actual Number of Delinquent Children.—As stated in the introduction to this Section, the figures in the foregoing tables do not represent the actual number of children charged and found guilty, since a child referred to the court more than once in a year is counted as a separate case each time. Thus the 13,329 appearances before the court in 1959 (Table **22**), which resulted in 11,686 delinquencies (Table **24**), involved 10,443 children. Of these 10,443 children, 9,443 were found delinquent on one occasion during the year, as shown in Table **31**, but 1,515 of these 9,443 were reported as having been found delinquent one or more times in previous years.

31.—Total Delinquent Children, by Number of Delinquent Appearances, 1959, with Number of Appearances in Previous Years

Number of Delinquent Appearances	Total Delinquent Children	Delinquent Appearances in Previous Years											
		0	1 or More	1	2	3	4	5	6	7	8	9	10+
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1 or more	10,443	8,589	1,854	1,103	383	156	89	40	26	18	8	9	22
1	9,443	7,928	1,515	932	301	129	60	26	21	16	7	6	17
2	826	560	266	139	64	20	22	8	3	2	1	3	4
3	131	85	46	20	13	4	4	4	1	—	—	—	—
4	29	11	18	9	3	2	1	2	—	—	—	—	1
5	10	4	6	3	1	—	2	—	—	—	—	—	—
6	2	1	1	—	—	1	—	—	—	—	—	—	—
7	2	—	2	—	1	—	—	—	1	—	—	—	—

Section 4.—Penal Institutions and Training Schools

Penal institutions may be classified under three headings: (1) penitentiaries, where prisoners have long sentences and the turnover is slow; (2) reformatories, where the turnover is also rather slow; and (3) common gaols, where the turnover is extremely rapid.

If the average of the figures for inmates at the beginning and at the end of the year be considered the average population for the year, and the number of discharged as the turnover, the turnover in the years 1958 and 1959 was: in penitentiaries, 64 and 56 p.c.; in reformatories, 352 and 317 p.c.; and in gaols, no less than 1,927 and 1,792 p.c., respectively.

32.—Movement of Population in Penitentiaries, Reformatories and Gaols, 1955-59

Type of Institution and Item	1955	1956	1957	1958	1959
	No.	No.	No.	No.	No.
Penitentiaries—					
Inmates in custody at beginning of year	5,120	5,507	5,508	5,432	5,770
Admitted during the year	3,096	3,112	2,977	3,919	3,917
Discharged during the year	2,709	3,112	3,053	3,582	3,392
In custody at end of year	5,507	5,508	5,432	5,770	6,295
Reformatories for Men—					
Inmates in custody at beginning of year	2,906	2,990	2,924	3,257	3,890
Admitted during the year	10,801	10,964	11,532	13,220	12,068
Discharged during the year	10,720	11,030	11,199	12,587	12,152
In custody at end of year	2,990	2,924	3,257	3,890	3,806
Reformatories for Women—					
Inmates in custody at beginning of year	155	165	168	145	164
Admitted during the year	622	630	541	560	583
Discharged during the year	612	627	564	541	575
In custody at end of year	165	168	145	164	172
Common Gaols—					
Inmates in custody at beginning of year	6,279	6,391	5,902	6,337	7,138
Admitted during the year	108,661	106,563	112,610	130,669	128,394
Discharged during the year	108,549	107,052	112,175	129,868	128,344
In custody at end of year	6,391	5,902	6,337	7,138	7,188
Totals—					
Inmates in custody at beginning of year	**14,460**	**15,053**	**14,502**	**15,171**	**16,962**
Admitted during the year	**123,183**	**121,269**	**127,660**	**148,368**	**144,962**
Discharged during the year	**122,590**	**121,822**	**126,991**	**146,578**	**144,463**
In custody at end of year	**15,053**	**14,501**	**15,171**	**16,962**	**17,461**

Subsection 1.—Penitentiaries*

The penitentiaries of Canada are administered by the Commissioner of Penitentiaries, responsible directly to the Minister of Justice. The system comprises the following permanent penitentiary institutions:—

(1) Six primary institutions, which receive inmates sentenced by the courts to imprisonment for terms of two years up to life, are located at New Westminster, B.C., Prince Albert, Sask., Stony Mountain, Man., Kingston, Ont., St. Vincent de Paul, Que., and Dorchester, N.B. Persons sentenced to penitentiary terms in Newfoundland are cared for in the provincially operated institution at St. John's, Nfld., under financial arrangements authorized by Sect. 82 of the Penitentiary Act.

(2) Five secondary institutions, to which inmates are transferred from the primary receiving institutions on the basis of their suitability for special forms of treatment, including vocational training. Two of these (the Federal Training Centre and the Leclerc Institution) are in close proximity to St. Vincent de Paul Penitentiary in the Montreal area. Collin's Bay Penitentiary and the Joyceville Institution are within a few miles of Kingston. The Prison for Women, to which female inmates are transferred upon committal to penitentiary in any part of Canada except Newfoundland, is adjacent to Kingston Penitentiary.

Three semi-permanent satellite institutions, at William Head, B.C., Valleyfield, Que., and Springhill, N.S., are operated as minimum-security extensions of the primary institutions in their respective areas. A Penitentiary Staff College is operated at Kingston, Ont., for the training of groups of Penitentiary Officers from all institutions through the media of regular and special courses and conferences.

During the year ended Mar. 31, 1960, the average daily population of the penitentiaries was 6,141 and the total net cash outlay for maintenance was $12,786,603 or $5.70 per inmate per day.

In 1958, the Minister of Justice appointed a Correctional Planning Committee for the purpose of considering ways in which a more effective and more fully integrated Canadian correctional system could be achieved. The basic principles contained in the report of the Planning Committee are now being implemented.

A new building has been constructed at the Prison for Women at Kingston to improve the facilities for segregation of inmates, to enable the introduction of training courses in homemaking and commercial subjects and to provide additional facilities for recreational and cultural purposes.

There has been a significant increase in the number of professional and technical staff members employed in the penitentiaries for the purpose of diagnostic study and improved classification and segregation of inmates. It is vitally necessary that conditions of over-crowding in major penitentiary institutions be relieved as quickly as possible and that those inmates who are most susceptible to reformative treatment be cared for under medium or minimum security conditions wherever it is practicable to do so. During the fiscal year 1961–62, it is intended to establish five Penitentiary Farm Camps adjacent to existing maximum-security institutions and to construct an equal number of Correctional Work Camps at points where useful projects may be undertaken on behalf of federal or provincial governments which would not otherwise be attempted within a period of at least ten years. A study has been made of the administrative methods used in the penitentiaries and at the Head Office and, as a result, a reorganization of the staffs has been effected. Intensive training courses are being conducted at the Penitentiary Staff College for the purpose of developing the executive capabilities of those officers who will be called upon to carry positions of senior responsibility in a rapidly developing service.

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* Prepared under the direction of A. J. MacLeod, Commissioner of Penitentiaries.

33.—Movement of Convicts in Penitentiaries, Years Ended Mar. 31, 1955-59

Item	1955	1956	1957	1958	1959
	No.	No.	No.	No.	No.
In Custody, Apr. 1	**5,120**	**5,507**	**5,508**	**5,433**	**5,770**
Received—					
From gaols	2,378	2,384	2,275	2,934	3,011
By transfer	708	706	668	944	872
By cancellation of ticket-of-leave	10	22	34	41	35
Totals, Received	3,096	3,112	2,977	3,919	3,918
Discharged by—					
Expiry of sentence	1,456	1,572	1,663	1,974	1,639
Transfer	708	706	669	944	873
Ticket-of-leave	449	723	637	577	540
Death	16	17	20	24	15
Pardon	66	70	47	40	299
Release on order of court	9	14	9	13	8
Other reason	5	10	8	10	19
Totals, Discharged	2,709	3,112	3,053	3,582	3,393
In Custody, Mar. 31	**5,507**	**5,508**[1]	**5,433**[1]	**5,770**	**6,295**

[1] Includes one inmate confined in a mental hospital.

34.—Summary Statistics re Convicts in Penitentiaries, as at Mar. 31, 1955-59

Item	1955	1956	1957	1958	1959
	No.	No.	No.	No.	No.
Country of Birth—					
Canada	5,123	5,157	5,123	5,412	5,946
British Isles and possessions	134	118	99	115	107
Austria and Hungary	13	17	20	34	33
Italy	7	10	13	11	12
Poland	33	37	31	25	33
U.S.S.R.	24	15	23	16	12
Other European	67	49	38	51	57
United States	99	86	68	84	78
Other countries	7	19	18	22	17
Marital Status—					
Single	3,357	3,325	3,307	3,503	3,806
Married	1,603	1,601	1,527	1,633	1,761
Widowed	143	156	157	158	158
Divorced	130	141	141	150	163
Separated	274	285	301	326	407
Sex—					
Male	5,412	5,426	5,347	5,682	6,181
Female	95	82	86	88	114
Age—					
Under 21 years	694	669	703	815	869
21 to 29 "	2,299	2,217	2,091	2,225	2,518
30 to 39 "	1,467	1,546	1,521	1,622	1,785
40 to 49 "	701	698	742	736	756
50 to 59 "	232	259	268	266	274
Over 60 "	114	119	108	106	93
Totals	**5,507**	**5,508**	**5,433**	**5,770**	**6,295**

The National Parole System.*—The progressive correctional system now in operation in Canada places emphasis on reformation rather than on punishment alone for the sake of retribution to society. It is quite obvious from past experience and from the high rate of recidivism among criminals that punishing a person for wrong-doing merely by depriving him of his freedom is not effective in turning that person from crime. It is therefore considered imperative that during his period of incarceration every possible means be taken to reform the inmate through treatment and training and through assistance with his personal problems. Not only is it desirable that the individual be given such assistance and returned to freedom as a useful citizen but it is also undoubtedly preferable for society generally that he be saved from the further resentment and bitterness that would result from imprisonment without assistance. The only way the public can be properly protected is by reforming the offender. Thus the treatment and training program in the institution is a vital part of the whole correctional process and parole is an extension of that training outside the institution.

In January 1959, the National Parole Board, consisting of a chairman and four members, was formed and given absolute jurisdiction over all matters of parole. It operates under authority of the Parole Act (SC 1958, c. 38) which came into force on Feb. 15, 1959, replacing the former Ticket-of-Leave Act administered by the Remission Service of the Department of Justice. A fifth member was appointed on Oct. 1, 1960. The Board has taken over the Remission Service, and the staff of the Board, numbering 100 persons, is known as the National Parole Service.

The basic purpose of parole is to reform and rehabilitate the offender and the function of the National Parole Board is to select those inmates in the various federal and provincial penal institutions who indicate that they sincerely intend to reform, and to assist them in doing so by grant of parole. The Board is not a reviewing authority and is not concerned with the propriety of conviction or the length of sentence but only with the problem of deciding, in each case it considers, whether or not there is a reasonable chance of reformation. Parole should not be confused with clemency and is not granted on humanitarian grounds alone. It is not a matter of shortening sentence, although it has the effect of shortening the time a man spends in gaol. Parole means that an inmate is allowed to serve the remainder of his sentence at large in society but under certain restrictions that will ensure his leading a law-abiding life. These restrictions are designed for the protection of the public and for his own welfare.

The decision of the Board is based on reports it receives from the police, from the trial judge or magistrate and from various people at the institution who deal with the inmate. Reports are also obtained from a psychologist or psychiatrist, when available. Where necessary a community investigation is conducted to secure as much information as possible about the man's family and background, his work record, and his position in the community. From all these reports, an assessment is made to determine whether or not he has changed his attitude and is likely to lead a law-abiding life. An inmate need not obtain the services of a lawyer to apply for parole. He may apply by sending a letter to the Board and is assisted in preparing such application at the institution, or another person may apply on his behalf. The Board automatically reviews all sentences of over two years. As soon as an application is received, a file is opened and investigation begun, the results of which are presented to the Board for decision. All applications and reports are processed by the Parole Board staff at Ottawa. In addition to the headquarters staff, there are nine Regional Officers stationed across the country. They interview all applicants for parole to give them an opportunity of making verbal representations to a representative of the Board. The Regional Officers also submit to the Board a report of the interview and their assessment of the inmate's suitability for parole. These Regional Officers have authority over the parolees in their various areas, and also give information and counsel to all inmates regarding possibility of parole and preparation for it.

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* Prepared by T. G. Street, Chairman, National Parole Board, Ottawa.

A person on parole is under the care of a supervisor, usually an after-care agency worker or a probation officer, who reports to the Regional Officer. If he violates the conditions of his parole or commits further offence or misbehaves in any manner, the Board may revoke his parole and return him to the institution to serve that part of his sentence outstanding at the time his parole was granted.

The inmate coming out of an institution faces many problems in regaining his place in society. He is assisted as much as possible by the members of the Parole Service, the after-care agencies and the provincial probation officers. But the success of the parole system depends on the public's understanding of the purpose of parole and its sympathy toward the problems of the ex-inmate. If he is unable to get a job or form new associations because of his past, the chances of his being rehabilitated are remote. However, with the increasing efficiency of the system, with greater co-operation and understanding among all people involved in the correction system and with the public generally, recidivism in Canada should be lessened and some of the problems of criminality solved.

In the first 22 months of operation (to Nov. 30, 1960), the Parole Board reviewed 8,690 applications and granted 3,898 paroles. During the same period, the Board revoked 248 paroles, which is a failure rate of about 6 p.c. related to the number of paroles granted.

Subsection 2.—Reformatories and Other Corrective Institutions

The latest information on reformatories and corrective institutions is that made available by the 1951 Census. Summary data only are given here.

As of June 1, 1951, there were 13 reformative and corrective institutions, four of which were for women. Enumeration cards were completed for 2,551 men and 141 women on June 1, 1951. In these institutions for adults 29 p.c. of the inmates were under 21 years of age at the time of admission and almost 50 p.c. were between the ages of 21 and 39 years. The proportion of single men was 63 p.c. and three out of four of the men whose residence was known lived in urban centres. More than one-half of the women (53.2 p.c.) were single and the majority (91.0 p.c.) of those whose residence was known lived in urban centres. From five to eight years of elementary school education were recorded for about one-half of the male and female inmates. Only 6.7 p.c. of the men were unemployed at the time of admission. On the other hand, 20.6 p.c. of the women were unemployed and another 34.0 p.c. had never worked.

The revenue for the support of the institutions for men was derived chiefly from provincial funds (56.0 p.c.) and from the sale by the institutions of farm and industrial products (41.3 p.c.). To support the institutions for women, income was received from provincial funds (31.0 p.c.), municipalities (1.8 p.c.), sale of products (53.4 p.c.), donations and bequests (4.6 p.c.) and other sources (9.2 p.c.).

Summary statistics of inmates, movement of population, terms of sentence and penal record of inmates are given in the 1954 Year Book, pp. 311-313.

Subsection 3.—Training Schools

Reports on movement of population are received yearly from training schools and figures compiled therefrom are shown in Table **35** for the years 1955 to 1959.

35.—Movement of Population in Training Schools, Years Ended Mar. 31, 1955-59

Item	1955	1956	1957	1958	1959
	No.	No.	No.	No.	No.
Training Schools for Boys—					
Pupils in residence at beginning of year	1,977	1,988	1,938	2,132	2,334
Admitted during the year	2,079	1,875	2,395	2,730	2,349
Discharged during the year	1,988	1,925	2,201	2,528	2,340
In residence at end of year	2,068	1,938	2,132	2,334	2,343
Training Schools for Girls—					
Pupils in residence at beginning of year	928	928[1]	926	1,096[2,3]	1,032[4]
Admitted during the year	767	803	737	1,095[3]	814
Discharged during the year	774	805	665	1,093[3]	856
In residence at end of year	921	926	998	1,086[3]	990
Totals—					
Pupils in residence at beginning of year	**2,905**[1]	**2,916**[2]	**2,864**	**3,228**[2,3]	**3,366**[4]
Admitted during the year	**2,846**	**2,678**	**3,132**	**3,825**[3]	**3,163**
Discharged during the year	**2,762**	**2,730**	**2,866**	**3,621**[3]	**3,196**
In residence at end of year	**2,989**	**2,864**	**3,130**	**3,420**[3]	**3,333**

[1] The discrepancy between pupils in residence at end of year 1955 and those in residence at beginning of 1956 comes from closing of St. Patrick's Home, Halifax, N.S.

[2] The discrepancy between pupils in residence at end of year 1957 and those in residence at beginning of 1958, comes from the inclusion of 98 pupils in Good Shepherd Home, Edmonton, Alta.

[3] The discrepancy of 12 pupils comes from the omission of Girls' Home and Training School, St. John's, Nfld.; this institution did not forward a return in 1958.

[4] The discrepancy comes from the exclusion of 54 students in Ste. Agnes' and Ste. Helene's Schools in Quebec.

More detailed information on training schools is collected at each decennial census. Statistics compiled from the Census of 1951 are summarized in the 1954 Year Book, pp. 314-316.

Section 5.—Police Forces

The Police Forces operating in Canada are organized under three groups: (1) the Federal Force, which is the Royal Canadian Mounted Police whose operations cover a very wide field in addition to purely police work; (2) Provincial Police Forces—the Provinces of Ontario and Quebec have organized their own Provincial Forces, but the other provinces engage the services of the Royal Canadian Mounted Police to perform parallel functions within their boundaries; (3) Municipal Police—every urban centre of reasonable size has its own police organization which is paid for by the local taxpayers and which attends to police matters within its borders.

Municipal police statistics are at present undergoing revision and are therefore not carried in this edition of the Year Book.

Subsection 1.—The Royal Canadian Mounted Police

The Royal Canadian Mounted Police is a civil force maintained by the Federal Government and was established in 1873 as the North-West Mounted Police for service in what was then the North-West Territories. In recognition of its services, it was granted the use of the prefix "Royal" by King Edward VII in 1904. Its sphere of operations was expanded in 1918 to include all of Canada west of Port Arthur and Fort William and in 1920 it absorbed the Dominion Police, its headquarters was transferred from Regina to Ottawa and its title was changed to Royal Canadian Mounted Police.

The Force is under the control of the Minister of Justice and is headed by a Commissioner who holds the rank and status of a Deputy Minister. Officers are commissioned by the Crown and are selected from the non-commissioned ranks. The Force has complete jurisdiction in the enforcement of the federal statutes. By arrangement between the federal and provincial governments it enforces the provincial statutes and the Criminal Code in all provinces exclusive of Ontario and Quebec and under special agreement it polices some 119 municipalities. It is the sole police force in the Yukon and Northwest Territories, where it also performs various administrative duties on behalf of certain departments of the Federal Government. It maintains liaison officers in London and Washington and represents Canada in the International Criminal Police Organization which has headquarters in Paris.

Of the Force's 17 divisions, 12 are actively engaged in the work of law enforcement, as are some 40 subdivisions and 638 detachments. The five remaining divisions are "Headquarters", "Depot" and "N", which are maintained as training centres, and "Marine" and "Air", which support the operations of the land divisions. A teletype system links the widespread divisional headquarters with the administrative centre at Ottawa and a network of fixed and mobile radio units operates within the province. Focal point of the Force's criminal identification work is the Headquarters Identification Branch; its services, together with those of the 39 divisional and subdivisional units and the three Crime Detection Laboratories, are available to police forces throughout Canada. The Force operates the Canadian Police College at which Force members and selected representatives of other Canadian and foreign police forces may study the latest advances in the fields of crime prevention and detection.

The uniform strength of the Force at Mar. 31, 1960, was 5,540, at which time it maintained some 1,598 motor vehicles, 16 aircraft, 72 ships and boats, 269 sleigh dogs, 31 police service dogs and 222 horses.

Subsection 2.—Provincial Police Forces*

Quebec Provincial Police Force.—This Force is responsible for upholding law and order over the whole territory of the province, from the provincial boundary between Ontario and Quebec to the Magdalen Islands in the Gulf of St. Lawrence. The Force is composed of about 1,600 men under the orders of a Director, who is responsible to the Attorney General of the province.

To facilitate operations, the territory is divided into two almost equal parts designated as the District of Montreal and the District of Quebec. The Director has his office in Montreal, with a Deputy Director in Quebec City. There is an Assistant to the Director in Montreal and one in Quebec.

Working under the Assistant Directors for the Montreal and Quebec Districts are the following: an Inspector General; an Inspector (Detective Branch); an Inspector (Traffic Branch); and an Inspector (Constabulary). Each of these three sections (Detective, Traffic, Constabulary) is under a captain supported by a number of lieutenants and sergeants.

There are 40 Outpost Detachments in the Montreal District and 18 in the Quebec District.

Ontario Provincial Police.—The Ontario Provincial Police Force is maintained by the Ontario Government and administered by the Attorney-General's Department. It is responsible for law enforcement in the rural and unorganized parts of the province and in certain municipalities by contract. The development of the Force from its beginning in the early years of Confederation to the passing of the Police Act in 1946 is outlined in the 1950 Year Book, pp. 332-333.

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* Revised by Geo. A. Shea, O.B.E., Secretary-Treasurer, Canadian Association of Chiefs of Police, Montreal.

The Force, with a strength of approximately 1,860 in 1960, consists of a General Headquarters at Toronto and 17 District Headquarters at Chatham, London, Dundas, Niagara Falls, Toronto, Mount Forest, Barrie, Peterborough, Belleville, Perth, Cornwall, North Bay, Sudbury, Sault Ste. Marie, Timmins, Port Arthur and Kenora. Each District has detachments adequate to meet local law-enforcement requirements. A Criminal Investigations Branch, under the command of an Assistant Commissioner, is maintained at Toronto to handle crimes of a major nature.

The Force operates one of the largest frequency-modulation radio networks in the world, which is a most efficient method of combatting every type of lawlessness. The network includes 71 fixed stations and 609 radio-equipped mobile units including five boats operating on Lake Temagami, Lake Simcoe, Lake Nipissing, Lake of the Woods and Georgian Bay.

In 1960, the Ontario Provincial Police Force policed 50 municipalities which requested this service under the provisions of the Police Act.

CHAPTER VIII.—EDUCATION AND RESEARCH

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—FORMAL EDUCATION*

Section 1.—Education in the Provinces and Territories

Education in Canada has been moulded according to certain principles and practices which should be appreciated if the present education system is to be understood. First, on entering the Canadian federation, each province retained responsibility for exercising control of formal education within its own borders, a right as jealously guarded today as at that time. Second, there has been a division of responsibility since then between the provincial departments of education and the local boards which operate under provincial school law and school regulations. Third, the Canadian people believe in education for all youth, as evidenced by the fact that much effort has been directed toward equalizing educational opportunity from elementary through secondary and higher education. Fourth, it is also recognized by Canadians that a high general education level on a broad front is necessary to safeguard their democratic way of life, to appreciate and exploit their natural resources to the full, and to assume their responsibilities in international fields.

Interest of the Federal Government in Education.—The Federal Government retains responsibility for the education of Indians and Eskimos, other children in the territories outside the provinces, inmates of penitentiaries and members of the Armed Forces and their families living on military stations or overseas, although provincial educational facilities are utilized whenever possible.

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* Information supplied by the Education Division, Dominion Bureau of Statistics.

Education of Indian children in Canada is a function of the Indian Affairs Branch of the Department of Citizenship and Immigration. Residential schools are provided for orphans, children from broken homes, and children of isolated families. Day schools are available for children living in communities and, where conditions are favourable, Indian children attend non-Indian schools. In addition, vocational and professional training is provided for Indian youths. (See also pp. 172-173.)

The provision of educational facilities for the nomadic Eskimo population, a responsibility of the Northern Administration Branch of the Department of Northern Affairs and National Resources, is a more difficult problem. There are now about 50 schools established throughout the vast Northwest Territories at points scattered from the Mackenzie Delta to northern Quebec. Some of these are operated by religious missions assisted by government grants. All northerners attend the same schools, which range from the larger school at Yellowknife where a variety of vocational courses is given and where students may qualify for university entrance, to single classroom units in remote Eskimo settlements. Vocational training is considered so important for the Eskimo young people in certain areas that specially chosen groups are sent south to secure training in trades in which they may later find employment in their own communities. (See also p. 175.)

Federal interest in education is also shown through grants to vocational education; grants to universities and colleges; grants for research and construction through the Canada Council; grants-in-aid for equipment and personnel to education institutions through the National Research Council, the Defence Research Board, the Department of National Health and Welfare and several other agencies of government. The Federal Government also assists formal and informal education at various levels through programs or materials provided by the National Film Board, the Canadian Broadcasting Corporation, the Department of National Health and Welfare, the Department of Agriculture, and so on.

Administration and Organization of Education in the Provinces.—Because each of the ten provinces has the authority and responsibility for organizing its own system of education, with the legislature being responsible to the electorate for its decisions, there are in existence ten distinct provincial systems with differing policies, organizations and practices. Even so, in some respects a great deal of similarity has developed among the systems as a result of interchange of personnel and ideas, ease of transportation and communication, interprovincial and national education bodies, proximity, co-operation and emulation. Each province has established a department of education and, except in Quebec, each has a Cabinet Minister as Minister of Education. The Quebec department is administered by a Superintendent of Education—a non-political appointee—who maintains liaison with the Cabinet through the Minister of the Department of Youth; he is head of the Council of Education, composed of Roman Catholic and Protestant Committees which sit separately, each being responsible for the organization and discipline of its own public schools and teacher-training institutions, for conducting examinations for school inspectors, and for making recommendations to the Cabinet concerning school grants and certain specified appointments.

The provincial departments of education assist local boards in providing elementary and secondary schools and, in some cases, establish schools in isolated areas. In addition, they generally either establish schools for deaf and blind persons or make provision elsewhere for their education and also provide for the education of other atypical pupils. Teacher-training is conducted in provincial establishments or by arrangement with one or more universities, and trade schools or institutes are established by provincial departments where deemed expedient.

Local School Organization.—Publicly elected or appointed municipal school boards function as corporations under the school Acts and regulations and are held responsible to the provincial government and resident ratepayers for the operation of schools. Through such delegation of responsibility, publicly controlled education has become a provincial-local partnership with the degree of decentralization varying somewhat from province to province and from time to time. For example, matters concerning control of the curriculum, supervision and contributions of revenue to the boards are, and will continue to be, recurrent problems. Local boards may be elected, appointed or partly elected and partly appointed. They differ in number of members—usually three members for one-room rural districts but as many as five, seven or even twelve or more for urban units. Where larger units in rural areas have been established there are central boards for the unit representing the component districts, although there may be local boards which retain some custodial and advisory duties.

The larger unit, replacing rural districts which were usually about four miles in extent, was introduced by legislation in several provinces and made optional in others in an effort to provide better school facilities and greater equalization and to mitigate the problems caused by a chronic shortage of teachers. Larger units have been established by legislation in Alberta and British Columbia and by Acts with provision for local option in Saskatchewan and the Maritime Provinces. Southern Ontario has been gradually organizing its rural areas into township and county units; Manitoba has recently introduced legislation whereby communities will find it beneficial to form larger secondary units; and Protestant Quebec has been essentially organized into larger units. In Catholic Quebec one board of commissioners administers all Roman Catholic schools in a school municipality, whether rural or urban, and secondary education is being consolidated more and more into larger central secondary schools. In that province there have always been more private residential schools established by religious groups than elsewhere. In addition, the fact that Quebec has more than 100 vocational and agricultural schools has lessened the need for the composite type of school.

Larger units vary in organization. In some provinces the rural sections are formed into units of perhaps 80 or more rural schools; in others the towns and villages are included in the units, or may be included if they so desire; in still others secondary schools only are consolidated in the larger units. Usually each unit board is advised by a superintendent who maintains liaison with the department of education, and where units are headed by a professional educator there is a trend toward delegating more professional responsibilities to the unit board. In several provinces there remains the problem of making school administrative units and municipal units conterminous.

Each department of education, among its duties, undertakes to provide for the selection, training and certification of teacher candidates; to establish courses of study and prescribe school texts; to provide inspection services and liaison between the local boards and the department; to assist in financing the schools through grants and services; and to make rules and regulations for the guidance of trustees and teachers. In return, regular reports are required from the teachers and the districts.

The first government grants were based on such factors as number of teachers, enrolment, days in session and attendance. Later, special grants were introduced in most provinces to meet a variety of expenses such as the erection of the first school and other construction, the organization of special classes, transportation for pupils, and school lunches. More recently, most provinces have made some provision for equalization grants and several have introduced a basic grant for operation supplemented by a limited number of special grants.

The public school system normally provides 12 or 13 years or grades, depending on the province. Common patterns for elementary and secondary levels are 8-4 or 8-5, 6-3-3 or 6-3-4, or 7-5. The trend is toward six elementary years with six or seven years of secondary schooling, following the practice of doing away with the one-room rural units through consolidation and the consolidation of small high schools. The generally accepted age of entrance to regular classes is now six years, although there has been an increased demand for kindergarten and nursery schools that has not been satisfied in many areas because of pressure for accommodation at the higher levels. Many private nursery schools and kindergartens have been established which have helped to ease the situation. The amount of supervision for these pre-school organizations varies widely from province to province but is usually minimal.

Parent-teacher and home and school organizations are numerous and active across Canada, giving community leadership in many areas connected with child instruction and welfare and working toward better schooling.

School Construction.—The development of larger school units and the consequent decrease in the number of one-room rural schools has more than balanced the increase in the number of new schools erected to accommodate increased enrolment. Thus the total number of elementary and secondary schools has been decreasing slightly for some years although pupil accommodation has greatly increased year by year. At the higher education level, increased enrolment has resulted in an unprecedented expansion of facilities as well as in an upgrading of colleges into universities and in the establishment of new institutions. Planners and designers of new school buildings have paid greater attention to functional architecture, to the use of modern light-weight materials and to equipment possibilities. Gone are basements, towers, expensive trim and waste space, but more expensive heating, plumbing and ventilation systems have been incorporated. Flexibility has been introduced through non-bearing interior walls, easily movable desks and other equipment. Well-organized, smartly tailored rooms are common, featuring acoustic and glazed tile, terrazzo flooring, metal partitions, suspended ceilings and fluorescent fixtures. Warm colours are used for north rooms, cool colours for sunny rooms and special rooms are designed for such courses as home economics, mechanics, music and chemistry.

Most of the universities have conducted financial campaigns for expansion at some time during the past ten years and indications are that many more such campaigns must be undertaken in the near future. Despite expansion and modernization, there are still some old and crowded buildings in use which contrast sharply with the new, well-planned, roomy, permanent structures on spacious campuses. All Canadian universities are expanding, whether they are located in the cramped heart of a city, have begun again in suburban areas, or were fortunate enough to have ample room on their first campus sites.

Special Education.—Each year increased provision is made for children who need special programs, particularly for those in the cities where numbers warrant such attention. There are in Canada six schools for the blind and nine schools for the deaf and in a number of centres classes are held for hard-of-hearing pupils and for those with poor vision. Other physically handicapped children for whom instruction is provided include cerebral-palsied, orthopaedic, and hospitalized and homebound tubercular and delicate children as well as the mentally retarded and emotionally disturbed. In addition to the special assistance given to the handicapped, a limited number of classes are conducted for mentally gifted children. Special educational services are also provided for the Indian and Eskimo nomads of Northern Canada and for isolated children such as those serviced by railway-car classrooms in northern Ontario and by bus classrooms in British Columbia.

Altogether, about 50,000 children are cared for in one or another of 110 special public schools, 590 classes, and 130 private schools, some of which receive government aid. About 2,000 teachers conduct these services.

Financing Education.—Slightly more than 3 p.c. of Canada's gross national expenditure, or $1,049,000,000, was expended on formal education during 1957. Almost 12 p.c. of all municipal, provincial and federal revenue went for education, with the municipalities providing 43 p.c. and the provinces 41 p.c. of the total. Municipal revenue is obtained mainly from direct taxes on land and improvements and from business taxes; provincial revenue is obtained from a variety of sources such as corporation taxes, sale of alcoholic beverages, tobacco, etc., licences, permits, etc., and from federal tax-rental agreements, and may also be secured through a special education tax of from 2 to 4 p.c. on sales.

Federal expenditures on education include sums for the education of Indians and Eskimos, and children of members of the Armed Services, war dead and veterans. They also include grants to the National Federation of Universities to be divided among the provinces on a per capita basis and then distributed among the universities of a province according to the number of regular full-time students enrolled. Other grants are provided, usually on a matching basis, to the provinces for vocational education; scholarships and grants-in-aid of research are awarded to universities and individuals by the National Research Council, the Defence Research Board, the Canada Council and various departments of government; and grants for libraries and student residences are awarded through the Canada Council.

The provincial departments of education make grants to all publicly controlled schools and are also financially responsible for an increasing number of services. Such services, as mentioned previously, include the establishment and maintenance of teacher-training colleges or assistance to universities for the provision of that training; the establishment and maintenance of technical institutes and trade schools; and the provision of correspondence courses.

Municipal governments must provide money for buildings and equipment, maintenance and other operating expenditures. They must raise, by direct taxes, the difference between the amounts budgeted for by the school boards and the grants received from the provincial government. Provincial grants account for from 79 p.c. of the total school-board revenue in Newfoundland to 30 p.c. in Manitoba and Quebec. Methods of payment vary. British Columbia, Nova Scotia and Manitoba no longer pay flat and incentive grants, but instead pay operation grants based on equalization formulas. Two other provinces—Newfoundland and Prince Edward Island—achieve a degree of equalization by paying the greater part of the cost of instruction. Ontario, Saskatchewan and Alberta make use of various flat and equalization grants, and New Brunswick and Quebec use flat and special grants. In addition, most provinces provide grants for capital expenditure, establish loan funds, and guarantee and assist in marketing debentures.

Private schools are normally supported from endowment income, gifts from religious or other sponsoring or operating bodies, and student fees. Universities and colleges receive about 19 p.c. of their current revenue from the Federal Government, 37 p.c. from provincial governments, 30 p.c. from fees, 4 p.c. from endowments and gifts, and 10 p.c. from various other sources.

Vocational and Technical Education.—There has been considerable growth in vocational and technical education during the past decade. Technical education is usually administered by the provincial departments of education. Across Canada approximately 210 provincial and municipal institutions give technical and trade training. Of these, 29 offer mainly post-secondary or advanced technical courses, about 100 are high schools and some 80 are trade schools.

Provincial trade schools and technical institutes are organized to complement the work of vocational high schools and train qualified tradesmen and technicians. Contributions of the Federal Government, usually on a sharing basis with the province, have been a matter of contributing to the economic efficiency of the people, having regard for employment and the economic development of the country. Grants are made according to agreement providing for assistance to appropriate provincial government authorities operating approved vocational training projects. These schools are also frequently assisted by industry, which may contribute financially, employ students for the summer, assist in shaping the course of study, and provide equipment. Some of these schools offer a wide range of courses such as engineering technology, radio, electronics, metal trades, stenography, computing devices operation, and apprenticeship in skilled trades.

Several other provincial departments of government offer specialized courses in such occupations as mining, forestry, fishery, agriculture, navigation and dairying. The Armed Forces train certain recruits for technical positions in the Services and assist others to take university courses through extension or otherwise.

Nursing education is provided in schools of nursing attached to the larger hospitals and advanced training is given in university hospitals. The training of nurses' aids or 'practical' nurses is carried on in some provinces.

Private trade schools, some offering correspondence courses only, conduct a wide variety of courses in fields ranging from hair styling to automotive engineering, and for occupations as dissimilar as artist, time-study engineer, and radio technician.

Adult Education.—Classes and courses for adults are conducted in all provinces and the territories, under private or public auspices. According to a survey of participants conducted in June 1960, about one adult in 25 was enrolled in some type of adult education course during the academic year 1959-60. Almost half of the total enrolment was in courses of a vocational nature (42 p.c.), a similar proportion was in general cultural and artistic fields, and the remainder in academic subjects for credit toward a high school diploma or university degree. In addition, universities and colleges, government agencies and private organizations sponsor public lectures, film showings, tours and performances of an educational nature for adults; in 1958-59 such programs drew an estimated attendance of several million. A considerable proportion of the productions of the Canadian Broadcasting Corporation provide educational experiences for adults in their own homes, and many educational films and filmstrips produced by the National Film Board reach adults through private and public showings.

Teachers and Teachers' Salaries.—Candidates for teaching certificates are generally required to have high school graduation or better, plus one year of professional training. Teacher training is given in provincial teacher-training colleges in courses lasting one school year or occasionally two, or in the universities where the training is usually combined with arts and science classes in a regular three-year or four-year university course. Secondary school teachers must have university graduation plus one year of professional training, or a special four-year university course in education.

In 1960-61 there were 126 normal schools and teachers' colleges preparing teachers, and 22 university faculties of education; together these institutions expected to graduate more than 17,000 teachers at the end of that school year. In 1959-60 there were 147,688 full-time teachers in the elementary and secondary schools and 7,550 in universities and colleges; about 73 p.c. were women and 38 p.c. of these were married. The majority were between 24 and 45 years of age.

Teachers are generally employed according to a local salary schedule, belong to a provincial superannuation scheme and are members of a professional organization.

Research in Education.—The wide variety of research at present being undertaken in the field of education is expanding in scope and increasing in variety of method, and involves large numbers of personnel. Among the types found are historic and other studies, surveys, projects in applied research including action research, and a limited amount of basic or pure research. Most of the pure research is conducted in the universities by individuals or teams of professors and graduate students and the same personnel may conduct applied research. Applied research is also conducted by such organizations as the Canadian Education Association, the Canadian Teachers' Federation, the Education Division of the Dominion Bureau of Statistics, l'Association canadienne des Éducateurs de Langue française, the Industrial Foundation on Education, the Canadian Universities Foundation, etc. In addition, certain of the departments of education and city school boards have research officers who, for the most part, conduct research into curricula examinations, promotion policies, use of visual aids, and related problems.

Operation or action research which developed during the Second World War has been adapted to many fields including education and is aimed at carrying out a certain operation as well as possible with the means available. Administrators and others are making considerable use of such procedure but it is difficult to decide just when such action should be designated as research.

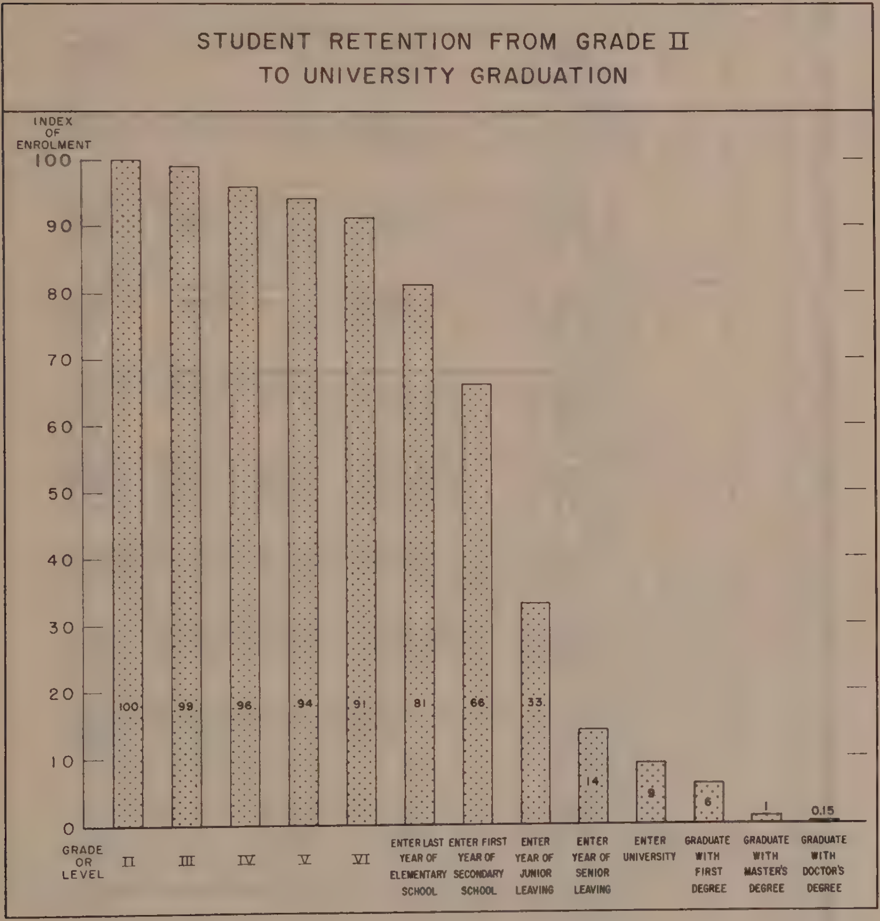
One of the most promising portents for the future of research in education is the formation of provincial or regional councils to provide co-ordination of effort, to ensure professional advice, to publicize research findings, and to encourage research into imminent problems. Three such councils are well organized and publish journals. Several national bodies interested in research in education have formed a National Advisory Council on Educational Research which has provided liaison among its constituent bodies and is considering expanding its efforts through publications and advisory services.

During the past decade there have been several provincial Royal Commissions appointed to inquire into education as a whole, or into some phase of it. Many of these have made use of research techniques as well as submissions received from interested bodies and individuals.

A number of longitudinal studies covering secondary pupils in one or several provinces are assessing the utilization of student resources related to university graduation. Other extensive studies have been related or are related to school administration, visual aids and school finance. In addition, a limited amount of institutional research is being undertaken by several universities.

Section 2.—Statistics of Schools, Universities and Colleges

Education institutions may be grouped in the following categories: publicly controlled schools, privately controlled schools, universities and colleges, and federal schools. The publicly controlled schools, by far the largest group, include, in addition to all publicly controlled elementary and secondary schools, vocational institutes and trade schools, teacher-training colleges, correspondence courses, and schools for the blind and deaf. Private schools may be academic, business or trade schools, or correspondence schools. The universities and colleges may be provincial institutions, church institutions, or independent. The federal schools include those for Indians, schools in the Northwest Territories and schools overseas for children of members of the Armed Forces or for Armed Forces personnel. Evening courses may be given by public schools, usually assisted by provincial grants, by private schools, by universities or colleges, or by other organizations.



STUDENT RETENTION FROM GRADE II TO UNIVERSITY GRADUATION

Table 1 shows the number of schools, teachers and pupils for all types of education institutions classified by province, for the academic year 1958-59. In all types of schools, the number of pupils has been increasing. The increase was first noticed at the elementary level some six years after the birth rate began to rise during the war years. About eight years later the children born during the War were entering high school and four years later they began entering university. The number of teachers is rather closely related to the number of students although the trend is toward larger classes. On the other hand, the number of schools has remained fairly constant, the increase caused by the construction of new and larger schools in urban areas being counterbalanced by the closing of many one-room rural schools.

1.—Schools, Teachers and Enrolment for All Types of Education Institutions, by Province, School Year 1959-60

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Elementary and Secondary Education—												
Public and Separate—												
Schools	1,166	448	1,237	1,384	7,890	7,482	1,352	2,610	1,211	1,239	62	26,081
Teachers	4,019	904	6,432	5,631	43,348	45,371	7,076	8,337	11,071	11,285	245	143,719
Pupils	124,867	24,151	177,092	147,836	1,043,059	1,319,225	178,116	202,310	277,920	306,021	6,490	3,807,087
Overseas (DND)—												
Schools	...	...	...	...	...	...	...	...	...	...	...	15
Teachers	...	...	...	...	...	...	...	...	...	...	...	342
Pupils	...	...	...	...	...	...	...	...	...	...	...	6,624
Indian—[1]												
Schools	—	1	8	9	30	127	86	80	50	82	1	474
Teachers	—	2	33	26	129	277	221	215	229	226	6	1,364
Pupils	—	37	769	498	2,179	7,145	5,422	4,553	4,732	5,778	352	31,465
Blind—												
Schools	—	—	1	—	3	1	—	—	—	1	—	6
Teachers	—	—	18	—	34	30	—	—	—	9	—	91
Pupils (home province)	28	6	62	46	230	158	23	25	21	70	1	670
Deaf—												
Schools	—	—	1	—	3	1	1	1	1	1	—	9
Teachers	—	—	22	—	93	66	5	22	25	20	—	253
Pupils (home province)	57	4	103	71	642	497	91	94	144	174	4	1,881
Private—												
Schools	[2]	5	24	15	752[3]	132	48	34	46	70	—	1,126
Teachers	[2]	36	274	172	5,125[3]	1,555	424	268	286	678	—	8,818
Pupils	[2]	708	6,268	2,618	92,990	25,316	10,399	4,566	6,242	16,188	—	165,295

Higher Education—												
Institutions (1958–59)	2	2	16	9	204	62	10	16	10	8	—	339
Students (full-time university grade)	1,070	530	5,300	3,700	33,700	29,400	5,850	4,860	6,100	11,490	—	102,000
Teacher Training—												
Teachers' Colleges—												
Institutions	—	1	1	1	122	9	1	2	—	—	—	137
Teachers	—	1	16	24	810	148	22	35	—	—	—	1,056
Students	—	78	491	579	7,858	5,951	621	850	—	—	—	16,428
Faculties of Education—												
Faculties[4]	1	1	5	3	7	2	2	1	2	2	—	26
Teachers	9	1	14	8	129	35	9	8	51	63	—	327
Students[4]	597	39	220	135	2,630	646	211	631	1,676	2,294	—	9,079
Vocational Education—												
Pupils—												
Trade courses (pre-employment)	864	119	898	679	8,126	947	1,349[5]	361	596	3,450	296	17,685[5]
Trade courses (apprentices)[6]	881	—	487	907	[7]	2,223	924	913	3,615	2,932	—	12,882
Vocational high school courses[8]	346	122	1,172	4,734	22,900[5]	54,019	2,116	4,120	10,697	7,384	15	107,625[5]
Post-secondary courses	—	—	15	78	4,693	2,714	—	64	648	92	—	8,304
Private business schools	—	[9]	568	586	9,100[5]	5,099	1,143	945	1,593	1,921	—	20,955[5]
Adult Education (part-time)—												
Enrolment (1958–59)	2,803	463	10,469	10,808	98,811	141,540	38,001	22,215	21,692	52,172	—	415,658[10]
Universities and colleges (1958–59)	1,516	792	5,864	5,462	29,465	50,164	5,886	15,121	16,772	13,040	—	144,082

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[1] Day, residential and hospital schools administered by the Federal Government. [2] One school reported; data included with Nova Scotia. [3] Exclusive of classical colleges and normal schools where secondary education is given. [4] Also included with "Higher Education". [5] Estimate. [6] Includes indentured apprentices taking full-time, part-time and correspondence courses. [7] Included under "Trade Courses (Pre-employment)" are 675 apprentices in March 1960 and 614 in September 1960. [8] Also included with "Public and Separate—Pupils". [9] Included with Nova Scotia. [10] Includes enrolment of 16,684 in classes and courses operated by Federal Government departments.

An attempt has been made to tabulate total expenditure on education, including formal education at all levels, vocational training of all types and also expenditure on cultural activities related to education such as adult night classes, fine arts and handicraft courses, and libraries, museums and art galleries. Such expenditure for the year 1957 is presented in Table 2, classified by source. Details of income of school boards for publicly controlled elementary and secondary schools for the years 1955-57 are given at pp. 354-355 and financial statistics for universities and colleges at pp. 358-360.

2.—Total Expenditure on Formal Education, Vocational Training, and Related Cultural Activities, by Source of Funds, 1957

Type of Education	Local Taxation	Provincial and Territorial Governments	Federal Government	Fees	Other Sources	Total Expenditure
	$'000	$'000	$'000	$'000	$'000	$'000
Formal Education—						
Elementary and Secondary—						
Public schools	451,435	341,769	15,333	5,480	9,785	823,802
Handicapped and others outside the public schools	508	4,857	..	...	250	5,615
Government correspondence schools	...	1,286	29	441	...	1,756
Indian and Eskimo education	...	...	23,894[1]	...	...	23,894
Private schools	...	...	...	27,867	5,846	33,713
Reform schools	...	553	...	...	...	553
Totals, Elementary and Secondary	451,943	348,465	39,256	33,788	15,881	889,333
Teacher training outside universities	...	9,211	9	299	20	9,539
Higher Education—						
Universities and Colleges—						
Current operating expenditures	340	37,026	17,873[2]	30,867	10,528	96,634
Plant expenditures from current funds	29	31,842	2,395	...	...	34,266
Research in universities	...	454	6,179	...	4,478	11,111
Defence colleges	...	...	4,193	...	...	4,193
Scholarships	...	1,517	1,899	...	7	3,423
Other	...	39	311	...	...	350
Totals, Higher Education	369	70,878	32,850	30,867	15,013	149,977
Undistributable expenditure	...	...	232	...	...	232
Totals, Formal Education	**452,312**	**428,554**	**72,347**	**64,954**	**30,914**	**1,049,081**
Vocational Training—						
Institutes of technology	...	8,837	865	948	121	10,771
Trades training	...	12,481	1,005	589	404	14,479
Apprenticeship	...	2,252	1,480	57	82	3,871
Training of unemployed	...	466	401	...	2	869
Training of handicapped	...	384	337	...	...	721
Training of health and welfare personnel	...	2,499	1,539	...	13	4,051
Training of inmates of reform institutions	...	276	227	...	...	503
Training of Indians and Eskimos	...	...	256	...	...	256
Other public expenditure on vocational training	...	357	299	2	4	662
Private business colleges	...	...	...	3,232	...	3,232
Totals, Vocational Training	...	**27,552**	**6,409**	**4,828**	**626**	**39,415**

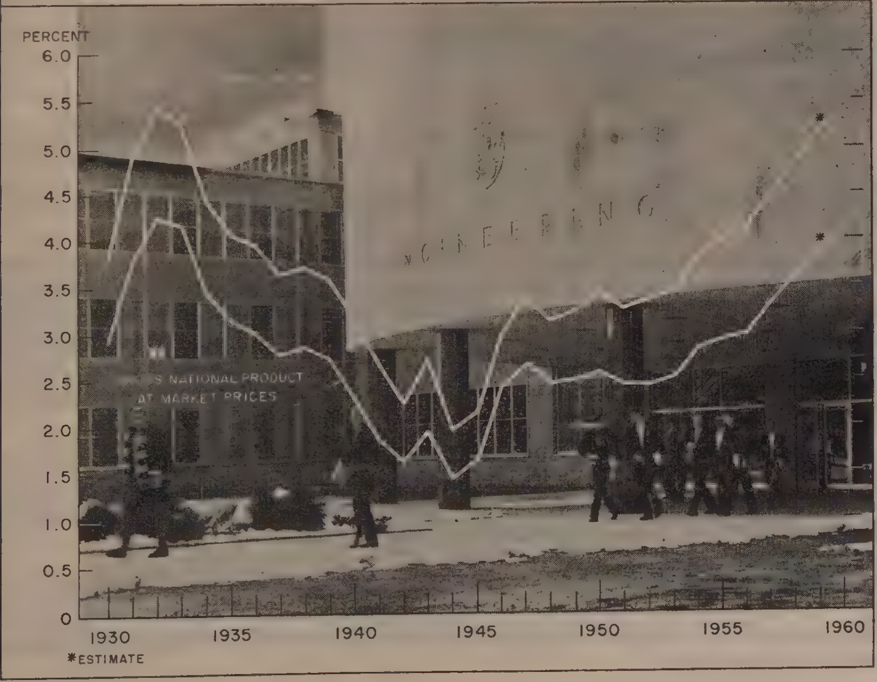
For footnotes, see end of table.

2.—Total Expenditure on Formal Education, Vocational Training, and Related Cultural Activities, by Source of Funds, 1957—concluded

Type of Education	Local Taxation	Provincial and Territorial Governments	Federal Government	Fees	Other Sources	Total Expenditure
	$'000	$'000	$'000	$'000	$'000	$'000
Cultural Activities—[3]						
Adult education, including night schools	[4]	1,399	426	1	..	1,826
Fine arts	...	969	1,068	...	...	2,037
Handicrafts	...	185	...	2	...	187
Libraries	9,603	2,551	517	75	651	13,397
Museums, archives, art galleries	...	1,448	2,193	...	5	3,646
National Film Board productions	...	...	955	...	...	955
Cultural societies—grants	...	139	26	...	...	165
UNESCO—grant	...	...	308	...	...	308
Totals, Cultural Activities	**9,603**	**6,691**	**5,493**	**78**	**656**	**22,521**

[1] Includes fees paid by Federal Government for Indians and Eskimos in public and private schools and in schools for blind and deaf, and for correspondence courses. [2] Includes $4,754,000 held in trust for Quebec universities. [3] Limited to reported expenditures of public funds. [4] Included in "Elementary and Secondary—Public schools".

TOTAL EXPENDITURE ON EDUCATION AND VOCATIONAL TRAINING AS A PERCENTAGE OF TOTAL PERSONAL INCOME AND GROSS NATIONAL PRODUCT AT MARKET PRICES



Subsection 1.—Elementary and Secondary Schools

Control.—Direct control and operation of public schools is by school boards, which operate under school laws and regulations, and the members of which are elected or appointed usually for terms of two or three years. As stated on p. 340, through amalgamations and consolidations, schools are now operated by boards of larger units, local boards within larger units, independent boards for rural schools, towns or cities, and some by official trustees appointed by the province in lieu of a board. As their designations imply, private schools and federal schools are administered by private organizations and federal authorities, respectively.

Table 3 gives the number of active public school boards in each province in the school year ended in 1960 and indicates the type of board, the number of official trustees and the number of board members elected or appointed to these boards.

3.—Active School Boards and School Trustees, by Province, School Year 1959-60

Province	Boards of Larger Units	Local Boards within Larger Units	Independent Local Boards	Total Boards	School Boards composed of Trustees who are— All Elected	Some Appointed Some Elected	All Appointed	School Trustees
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland	307	—	—	307	—	—	307	1,550[1]
Prince Edward Island	—	—	469	469	467	2	—	1,453
Nova Scotia	76	1,500	—	1,576	1,500	—	76	6,448
New Brunswick	14	512	79	605	453	152	—	2,395
Quebec—								
Roman Catholic	1	7	1,557	1,565	1,563	—	2	7,828
Protestant	10	14	263	287	286	—	1	1,216
Ontario	802	11[2]	2,986	3,799	3,543	38	218	14,896
Manitoba	43	1,395	193	1,631	1,631	—	—	5,262
Saskatchewan	56	4,994	400	5,450	5,450	—	—	15,973
Alberta[3]	58	—	146	204	196	—	8	799
British Columbia[4]	82	—	5	87	82	5	—	567
Mackenzie District	—	—	2	2	2	—	—	6
Totals	**1,449**	**8,433**	**6,100**	**15,982**	**15,173**	**197**	**612**	**58,393**

[1] Estimated. [2] Boards of Education, members of Toronto Metropolitan Board. [3] Ten school districts are under an official trustee or trustees. [4] In addition, five school districts are under an official trustee or trustees.

Enrolment.—Total enrolment in publicly controlled day schools increased from 1,092,633 in 1901 to 2,264,106 in 1931, but dropped during the 1930's and the early 1940's, when the birth rate was low, to 2,060,718 in 1944. After 1944 it rose slowly for some years and then at an accelerated rate to reach 3,813,711 in 1960. From 1954 to 1960 enrolment advanced by 950,000 for the country as a whole though the increase varied from province to province, ranging from 19 p.c. for Prince Edward Island and Saskatchewan to 42 p.c. for Ontario and 45 p.c. for British Columbia.

Enrolment in private elementary and secondary schools accounted for 4 p.c. of the total enrolment in these schools. The number of private school pupils, which was 100,000 in 1950 and 1952, rose rather sharply to a peak of 151,141 in 1956, dropped slightly to 150,476 in 1957, but increased to 165,295 by 1960.

Table 4 shows enrolment of all elementary and secondary pupils in the provinces and territories and in Department of National Defence schools overseas, and classifies them by grade. It also shows the numbers attending private and Indian schools in each province and territory.

4.—Enrolment in Publicly Controlled and Private Schools, by Grade, School Year 1959-60

Grade	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	No.	No.	No.	No.	No.	No.
Kindergarten	4,665	172	17,180	51	11,752	89,652
Grade 1	15,784	2,736	19,052	17,650	136,508	148,503
Grade 2	14,401	2,671	17,410	16,697	132,737	137,150
Grade 3	13,784	2,578	17,772	16,125	134,361	126,554
Grade 4	13,786	2,654	17,424	16,098	132,262	119,188
Grade 5	12,772	2,644	17,643	16,522	128,706	118,650
Grade 6	11,858	2,584	17,423	15,343	118,510	115,255
Grade 7	11,277	2,425	16,755	14,639	104,780	114,931
Grade 8	9,232	2,119	13,093	11,791	85,385	99,204
Grade 9	8,371	1,540	10,828	8,733	68,224	89,361
Grade 10	4,960	1,336	8,418	6,999	43,183	70,635
Grade 11	3,506	792	6,993	5,652	33,046	50,990
Grade 12	125	570	3,116	3,672	4,675	39,337
Grade 13	—	—	104	103	411	18,138
Auxiliary	—	29	542	316	3,266	9,980
Special	346	46	376	561	422	4,158
Unclassified	—	—	—	—	—	—
Totals	**124,867**	**24,896**	**184,129**	**150,952**	**1,138,228**	**1,351,686**
Publicly controlled	124,867	24,151	177,092	147,836	1,043,059	1,319,225
Private	[1]	708	6,268[1]	2,618	92,990	25,316
Indian[2]	—	37	769	498	2,179	7,145

Grade	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and N.W.T.[3]	DND Schools Overseas	Canada
	No.	No.	No.	No.	No.	No.	No.
Kindergarten	6,129	3,098	555	4,152	304	772	138,482
Grade 1	22,159	23,693	33,643	36,690	1,500	844	458,762
Grade 2	20,185	22,427	31,208	34,086	1,128	771	430,871
Grade 3	19,805	21,540	29,346	31,759	832	703	415,159
Grade 4	18,688	20,095	27,965	30,866	665	605	400,296
Grade 5	18,625	20,298	27,000	30,394	548	585	394,387
Grade 6	17,858	19,411	26,636	30,098	454	622	376,052
Grade 7	18,048	19,023	26,672	30,791	433	586	360,360
Grade 8	15,276	16,301	22,713	26,264	349	386	302,113
Grade 9	12,771	14,622	19,614	22,583	238	272	257,157
Grade 10	10,354	11,971	16,202	19,510	147	217	193,932
Grade 11	9,102	9,692	13,957	16,172	106	114	150,122
Grade 12	3,935	7,834	13,284	12,005	78	88	88,719
Grade 13	—	5	—	1,379	—	59	20,199
Auxiliary	918	882	—	1,033	60	—	17,026
Special	84	537	99	205	—	—	6,834
Unclassified	—	—	—	—	—	—	—
Totals	**193,937**	**211,429**	**288,894**	**327,987**	**6,842[4]**	**6,624**	**4,010,471**
Publicly controlled	178,116	202,310	277,920	306,021	6,490	6,624	3,813,711
Private	10,399	4,566	6,242	16,188	—	—	165,295
Indian[2]	5,422	4,553	4,732	5,778	352	—	31,465

[1] Enrolment of the only private school reported for Newfoundland included with Nova Scotia.

[2] Pupils in federal Indian schools.

[3] Includes Ungava District of Quebec.

[4] Total for the Yukon 2,293 pupils.

Teaching Staffs.—Between the school years ended in 1940 and 1960 the number of teachers in the publicly controlled schools in the ten provinces increased 89 p.c. from 78,017 to 147,688. The number of men teachers increased 98 p.c. and the number of women teachers 86 p.c.

In 1960, in the nine provinces outside of Quebec, 78.4 p.c. of the teachers had at least senior matriculation and one year of professional training, and an additional 11.9 p.c. had one year less schooling. Median experience in the eight provinces outside of Ontario and Quebec has slowly increased from 6.8 years in 1940 to 8.5 years in 1960, despite the large numbers of new teachers each year. Many of these have been recruited by the cities, where the median experience has declined from a high of 15.1 years in 1940 to 10.4 years in 1958 and 9.8 years in 1960.

Between 1940 and 1960, median salaries for all teachers in the nine provinces other than Quebec increased from $865 to $4,055, while that for teachers in one-room schools increased from $632 to $2,912. The annual rate of increase in the median, beginning with a modest 2 p.c. in 1945, accelerated year by year to reach 6 p.c. in 1954, decreased slightly to 5 p.c. in 1958 and then increased to 8 p.c. in 1959.

5.—Teachers and Principals in Publicly Controlled Elementary and Secondary Schools, School Year 1959-60

Province		Number	Median Salary	Median Experience	Fully Qualified[1]	University Graduates
		TEACHING ELEMENTARY GRADES[2]				
			$	yrs.	p.c.	p.c.
Newfoundland	M.	1,021	1,672	2.0	18.5	5.6
	F.	2,335	2,165	3.4	10.8	2.3
Prince Edward Island	M.	76	2,210	3.8	13.2	5.3
	F.	715	2,125	7.2	8.3	1.0
Nova Scotia	M.	427	3,236	6.9	80.1	36.2
	F.	4,546	2,605	10.1	60.5	9.5
New Brunswick	M.	464	2,764	2.8	43.5	22.2
	F.	3,827	2,323	7.8	21.5	2.9
Ontario	M.	7,689	4,425	6.5	86.8	21.7
	F.	27,434	3,616	7.5	80.7	5.1
Manitoba	M.	1,013	3,676	5.8	78.9	21.8
	F.	4,046	3,544	7.8	78.9	6.9
Saskatchewan	M.	1,565	3,905	7.1	97.3	9.0
	F.	4,942	3,672	8.1	94.8	2.3
Alberta	M.	1,521	4,761	7.9	89.3	33.8
	F.	6,581	4,071	8.7	83.1	7.2
British Columbia	M.	2,464	5,167	7.0	90.7	36.3
	F.	5,422	4,480	7.7	84.6	11.8

For footnotes, see end of table.

5.—Teachers and Principals in Publicly Controlled Elementary and Secondary Schools, School Year 1959-60—concluded

Province		Number	Median Salary	Median Experience	Fully Qualified[1]	University Graduates
		TEACHING SECONDARY GRADES[3]				
			$	yrs.	p.c.	p.c.
Newfoundland	M.	429	4,263	9.2	43.0	48.2
	F.	234	3,733	14.7	27.9	30.6
Prince Edward Island	M.	56	3,791	10.3	28.6	53.6
	F.	57	2,749	13.3	19.3	28.1
Nova Scotia	M.	730	4,665	9.0	81.9	73.3
	F.	729	3,956	13.1	64.4	55.8
New Brunswick	M.	690	4,285	6.9	51.7	48.3
	F.	650	3,342	10.9	36.3	32.8
Ontario	M.	6,745	7,103	9.3	76.1	86.0
	F.	3,503	6,410	7.8	79.3	90.9
Manitoba	M.	1,225	5,504	9.0	63.1	67.0
	F.	792	5,095	12.1	63.5	63.2
Saskatchewan	M.	1,246	6,048	12.3	62.9	60.6
	F.	584	4,899	12.4	51.0	53.9
Alberta	M.	1,809	6,516	12.3	64.3	69.7
	F.	1,160	5,017	13.1	44.2	49.7
British Columbia	M.	2,339	6,738	10.3	87.5	74.5
	F.	1,060	5,960	11.9	73.4	67.8
		TEACHING ELEMENTARY AND SECONDARY GRADES IN QUEBEC				
			$	yrs.	p.c.	p.c.
Quebec Roman Catholic schools (Lay teachers).	M.	4,910	4,647	9.2	80.1	31.4
	F.	23,012	2,113	5.8	28.5	1.9
Quebec Protestant schools	M.	1,186	5,945	7.4	67.6	43.6
	F.	3,401	3,716	7.0	50.1	13.6

[1] Fully qualified at the elementary level are teachers with junior matriculation and two or more years, or senior matriculation and one or more years of professional training. At the secondary level they are teachers with junior matriculation and four or more years, or senior matriculation and three or more years of schooling, of which one year was professional training. All teachers in Quebec were considered as fully qualified if they had a minimum of two years of training after junior matriculation. Thus, the Quebec data are not comparable with the data for the other provinces. [2] Comprises teachers and principals instructing or supervising kindergarten and elementary grades only, and those instructing or supervising both elementary and secondary grades in rural schools with five or fewer classes. Teachers and principals in Ontario are classified as elementary according to the provincial *Report of the Minister, 1958*. [3] Comprises teachers and principals instructing or supervising secondary grades only, and those instructing or supervising both elementary and secondary grades in urban centres and in rural schools with six or more classes. Teachers and principals in Ontario are classified as secondary according to the provincial *Report of the Minister, 1958*.

Financial Support.—The public elementary and secondary schools are financed almost wholly from provincial grants and money derived from local taxation. Fees for elementary schooling may be charged in Quebec. In a few of the other provinces nominal fees are charged for the higher secondary grades; in Newfoundland there is little local taxation and fees are generally charged.

In general, school boards submit their budgets to the local municipal councils which levy for and collect the required amounts. However, school boards in Quebec and a few in other provinces have the power to levy and collect taxes for school purposes. Assessment, on which taxes for school purposes are levied, is the total valuation of land and buildings, and sometimes improvements, personal property or business income are included. Steps have been taken by several provinces to equalize real property assessment over large areas or even over the whole province.

Each province has its own method of apportioning funds to local school boards. Grants are of two types. (1) The basic grant may be calculated on a minimum cost determined by an amount per classroom, salary and qualifications of the teacher, average attendance, etc. All provinces make some attempt to equalize educational opportunity through basing grants in part on some indication of need. (2) Special grants are paid to assist with transportation, music, arts and crafts, special classes, equipment, building costs, night classes, etc. These are largest in Quebec where there is marked emphasis on training for home industries, arts and crafts.

Newfoundland schools are supported largely from provincial funds. Tuition fees may be charged by school boards and by the boards of the colleges (actually schools of fairly high standard giving elementary and high school instruction) in the city of St. John's; additional fees may be charged for fuel or janitor service where these are not provided by pupils or their families. There has been no local taxation until very recently and it now exists only in a few of the larger centres. The provincial government pays teachers according to experience and qualifications and some school boards supplement this amount. The province also makes annual grants for plant maintenance and repairs and for new construction.

Table 6 presents a comparative statement of the finances of school boards operating publicly controlled schools, in so far as this information is available.

6.—Income of School Boards of Publicly Controlled Elementary and Secondary Schools, by Province, Fiscal Years Ended 1955-57

NOTE.—The receipts shown in this table do not include any amounts raised by loans or the sale of bonds or debentures as all revenue of this nature must be repaid ultimately with money raised by local taxation. Figures from 1914 are given in the corresponding table of previous Year Books beginning with the 1936 edition.

Province and Year	Income from—			Total Current Revenue Recorded	Debenture Indebtedness[1]
	Provincial Government Grants	Local Taxation	Other Sources		
	$	$	$	$	$
Newfoundland....................1955	6,959,716	—	1,997,532	8,957,248	..
1956	7,715,895	—	2,400,478	10,116,373	..
1957	8,935,000	30,000	2,382,000	11,347,000	..
Prince Edward Island............1955	994,249	813,908	95,389	1,903,546	..
1956	1,077,575	855,740	62,482	1,995,797	..
1957	1,174,000	1,000,000	56,000	2,230,000	..
Nova Scotia.....................1955	7,389,431	10,724,123	293,796	18,407,350	..
1956	10,748,523	11,383,492	181,550	22,313,565	..
1957	12,300,000	13,216,000	420,000	25,936,000	..
New Brunswick...................1955	6,775,614	10,407,409	498,051	17,681,074	..
1956	7,074,623	11,755,598	194,658	19,024,879	..
1957	7,712,000	13,453,000	308,000	21,473,000	..
Quebec..........................1955	26,420,000	76,222,000	18,802,000	121,444,000	165,935,000
1956	41,048,000	93,878,000	4,680,155	139,606,155	206,399,762
1957	48,659,000	106,655,000	5,366,000	160,680,000	236,472,000

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[1] Net figures, after deduction of sinking funds.

6.—Income of School Boards of Publicly Controlled Elementary and Secondary Schools, by Province, Fiscal Years Ended 1955-57—concluded

Province and Year		Income from—			Total Current Revenue Recorded	Debenture Indebtedness[1]
		Provincial Government Grants	Local Taxation	Other Sources		
		$	$	$	$	$
Ontario	1955	73,649,871	145,485,189	12,404,143	231,539,203	..
	1956	80,292,926	164,295,105	11,913,872	256,501,903	..
	1957	98,182,000	188,722,000	9,944,000	296,848,000	..
Manitoba	1955	8,578,062	19,250,730	458,229	28,287,021	18,774,207
	1956	8,928,352	21,424,949	610,132	30,963,433	21,337,183
	1957	10,093,000	23,472,000	566,000	34,131,000	23,529,467
Saskatchewan	1955	11,594,469	25,145,782	722,586	37,462,837	16,110,696
	1956	12,993,200	29,707,169	82,866	42,783,235	19,160,360
	1957	18,637,000	32,270,000	864,000	51,771,000	23,855,158
Alberta	1955	24,979,893	26,904,108	1,521,558	53,405,559	60,563,488
	1956	26,742,290	30,374,780	1,399,565	58,516,635	66,493,578
	1957	40,594,000	35,678,000	1,989,000	78,261,000	84,064,487
British Columbia	1955	33,992,023	25,613,837	1,755,527	61,361,387	..
	1956	35,570,755	29,794,611	1,793,462	67,158,828	..
	1957	39,446,000	36,766,000	1,699,000	77,911,000	..

[1] Net figures, after deduction of sinking funds.

Subsection 2.—Universities and Colleges

Institutions.—At the beginning of the 1958-59 academic year there were in Canada 339 institutions of higher education offering one or more years of degree-credit courses. Table 7 gives their distribution by province. Of the total, 292 were under the control of religious bodies (225 Catholic), 23 under provincial government control, three under Federal Government control, and 21 under private non-denominational control. At the beginning of the 1960-61 academic year there were probably over 350 institutions in all. Detailed information is not yet available for that year.

7.—Number of Institutions of Higher Education, by Province, Academic Year 1958-59

Province	Active Degree-Granting Institutions		Other Institutions	Total
	Theology Only	Other		
Newfoundland	—	1	1	2
Prince Edward Island	—	1	1	2
Nova Scotia	1	8	7	16
New Brunswick	—	6	3	9
Quebec	1	7	196	204
Ontario	7	10	45	62
Manitoba	2	1	7	10
Saskatchewan	4	1	11	16
Alberta	1	1	8	10
British Columbia	2	1	5	8
Totals	**18**	**37**	**284**	**339**

Enrolment.—Full-time university-grade enrolment continued at a record high in 1960-61. Preliminary figures show 114,000 such students in attendance. Indications are that enrolments may well be double the 1960-61 figure in about 10 years. Table 8 gives figures on enrolment, by province, for the academic years ended 1958-61.

8.—Full-Time Regular Winter Session University-Grade Enrolment, by Province, Academic Years Ended 1958-61

NOTE.—Figures are for enrolment at Dec. 1 of the academic year indicated and comprise actual graduate enrolment reported, and estimated figures for total enrolment based on data available from institutions representing about 98 p.c. of the total enrolment.

Province	1957-58		1958-59		1959-60		1960-61	
	Total	Graduate Only[1]	Total	Graduate Only[1]	Total	Graduate Only[1]	Total	Graduate Only[1]
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland	1,020	20	1,080	21	1,070	21	1,240	33
Prince Edward Island	350	—	420	—	530	—	570	—
Nova Scotia	4,800	63	5,000	116	5,300	130	5,820	147
New Brunswick	3,130	48	3,400	64	3,700	87	4,070	90
Quebec	28,500	1,376	31,000	1,407	33,700	1,599	38,000	1,981
Ontario	25,800	1,826	27,800	2,037	29,400	2,211	32,100	2,599
Manitoba	4,900	116	5,300	132	5,850	204	6,360	251
Saskatchewan	3,900	89	4,480	109	4,860	168	5,630	210
Alberta	4,540	169	5,350	246	6,100	294	7,140	350
British Columbia	9,560	348	10,570	418	11,490	520	13,070	857
Totals	**86,500**	**4,055**	**94,400**	**4,550**	**102,000**	**5,234**	**114,000**	**6,518**

[1] All theology enrolment included as undergraduate.

Foreign enrolment has risen considerably since the end of World War II, with a larger proportion of students from countries other than the United States and the United Kingdom coming to Canadian institutions, as shown in Table 9. In 1958–59 about one of every 16 full-time university students in Canada was a resident of a country other than Canada. Hong Kong, Trinidad and the United Kingdom each accounted for over 500 students while France, India and Jamaica contributed from 100 to 300 each. Just over 100 other countries or territories were represented in the figures.

9.—Students from Other Countries in Canadian Universities, and Canadian Students in Universities in the United States and the United Kingdom, Selected Academic Years Ended 1931-59.

Academic Year Ended—	Total Full-Time University Enrolment in Canada	Students with Residence in—					Total Enrolment from Other Countries in Canada[1]	Canadians Studying in—	
		United States	United Kingdom	British West Indies	Newfoundland[1]	Other Countries		United States[2]	United Kingdom[3]
	No.	No.	No.	No.	No.	No.	No.	No.	No.
1931	32,926	1,506	333	54	175	236	2,304	1,313	212
1941	36,319	1,478	41	74	174	289	2,056	1,458	..
1951	68,306	1,758	164	252	...	1,014	3,188	4,528	372
1956	72,729	1,773	281	635	...	1,696	4,385	4,990	404
1959	94,400	1,983	526	1,018	...	2,460	5,987[4]	5,432	438

[1] Before 1949 Newfoundland was considered as being a country outside Canada. [2] Data from Institute of International Education, New York. [3] Data from the Association of Universities of the British Commonwealth, London, England. Newfoundland is included with Canada for all years. [4] Includes 2,662 from all British Commonwealth countries and territories.

Graduates.—Table **10** gives figures for graduates in most faculties for the latest years for which figures are available.

10.—Graduates from Universities and Colleges, Academic Years Ended 1957-61

Note.—Figures for 1920-36 are given in the 1938 Year Book, pp. 993-997, and for 1937-56 in the corresponding table of subsequent editions.

Field of Study	1956-57		1957-58		1958-59		1959-60	1960-61
	Total	Female	Total	Female	Total	Female	Total[1]	Total[1]
	No.	No.	No.	No.	No.	No.	No.	No.
Graduates in Arts, Pure Science and Commerce	**7,467**	**1,981**	**7,929**	**2,103**	**8,583**	**2,340**	**9,500**	**10,200**
Bachelors of Arts[2]	5,782	1,774	6,054	1,889	6,389	2,081	8,500	9,000
Bachelors of Science (in Arts)[3]	887	159	990	170	1,187	201		
Bachelors of Commerce[4]	798	48	885	44	1,007	58	1,000	1,200
Graduates in Applied Science	**1,923**	**6**	**2,132**	**15**	**2,289**	**13**	**2,441**	**2,723**
Bachelors of Applied Science in Engineering	1,741	2	1,930	6	2,047	4	2,200	2,500
Bachelors of Architecture[5]	90	4	98	2	91	4	100	90
Bachelors of Forestry	87	—	101	7	150	5	140	130
Bachelors of Fisheries	5	—	3	—	1	—	1	3
Graduates in Agriculture, Veterinary Science and Household Science	**536**	**246**	**577**	**273**	**594**	**242**	**600**	**705**
Bachelors of Agricultural Science	237	9	247	12	294	8	280	340
First degrees in Veterinary Science	64	2	75	6	68	3	70	65
Bachelors of Household Science	235	235	255	255	232	231	250	300
Graduates in Education, Library Science and Social Service	**1,560**	**648**	**2,061**	**829**	**2,134**	**850**	**2,460**	**2,970**
First degrees in education or pedagogy	1,193	412	1,652	589	1,749	609	2,000	2,300
Librarian degrees and diplomas	92	79	92	67	85	66	120	180
Physical education first degrees and diplomas	87	34	99	42	103	42	140	250
Social service degrees and diplomas	188	123	218	131	197	133	200	240
Graduates in Medicine and Related Studies	**1,708**	**428**	**1,745**	**448**	**1,751**	**469**	**1,720**	**1,665**
Medical doctors	875	60	847	45	842	45	850	820
Dentists	177	4	202	4	196	7	210	180
Pharmacists	282	54	265	42	296	53	250	270
First degrees in nursing	174	174	195	195	230	230	250	250
Physiotherapy and occupational therapy	132	132	160	160	130	130	90	90
Chiropractic	42	2	40	1	35	3	50	30
Optometry	26	2	36	1	22	1	20	25
Graduates in Law and Theology	**1,463**	**67**	**1,494**	**69**	**1,592**	**72**	**1,800**	**1,575**
First degrees and equivalent diplomas in law	663	34	649	28	722	28	900	675
Roman Catholic theological colleges	526	—	559	—	542	—	550	550
Protestant theological colleges[6]	274	33	286	41	328	44	350	350
Other First Degrees and Equivalent Diplomas	**111**	**78**	**109**	**71**	**101**	**77**	**110**	**150**
Bachelors of Fine and Applied Arts	8	4	11	6	8	5	20	30
Bachelors of Interior Design	9	7	9	6	14	13	10	15
Journalism	28	15	32	20	20	9	20	25
Bachelors of Music	66	52	57	39	59	50	60	80
Graduate and Honorary Degrees	**2,066**	**305**	**2,167**	**339**	**2,388**	**401**	..	..
Honorary doctorates	209	10	245	15	303	10	..	..
Doctorates in course	292	23	272	25	284	30	300	325
Masters of Arts[7]	826	192	875	212	1,012	247	1,800	2,000
Masters of Science[8]	389	35	414	32	463	46		
Licences (except in Theology)[9]	234	44	232	51	213	66		
Bachelors of Divinity	116	1	129	4	113	2	120	120

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[1] Estimated. [2] Includes Bachelors of Letters and Social Science. [3] Some institutions include Science degrees in Arts. [4] Includes Bachelors of Accounting and Secretarial Science. [5] Includes diplomas in Architecture from the School of Fine Arts of Montreal. [6] Includes all diplomas and degrees except for Bachelors of Divinity. [7] Includes M. Com., M.Ed., M.Paed., M.S.W., as well as M.A. In some institutions, M.Sc. degrees are included with M.A.'s. [8] Includes M.A.Sc., M.S.A., M.Sc.F., M. Arch., M.V. Sc., M.Sc. Dent., M. Surgery (where conferred separately), as well as M.Sc. [9] The "Licence" in the French language universities is the next degree in advance of the Bachelor.

Teaching Staffs.—Table **11** shows the trend in university teaching staffs since 1950.

11.—Full-Time Teaching Complement in Universities and Colleges, Academic Years Ended 1950-61

Note.—Figures from 1957 are estimates based on returns from institutions representing about 50 p.c. of the total enrolment. Figures for all years include some research personnel and junior and sessional lecturers and assistants.

Academic Year Ended—	Teachers	Academic Year Ended—	Teachers
	No.		No.
1950	5,246	1956	6,719
1951	5,539	1957	7,000[r]
1952	5,874	1958	7,500[r]
1953	6,047	1959	8,200[r]
1954	6,503	1960	9,200
1955	6,474	1961	9,800

Table **12** gives median salaries, by rank and region, for the staffs of 17 major institutions for 1960–61.

12.—Median Salaries of Teachers at 17 Universities, Academic Year 1960-61

Note.—Institutions include: *West*—Universities of Manitoba, Saskatchewan, Alberta, British Columbia; *Central*—Bishop's, McGill, Queen's, Toronto, Victoria, Trinity, McMaster, Western Ontario; *Atlantic*—Acadia, Dalhousie, St. Francis Xavier, Mount Allison, New Brunswick.

Rank	Region				Staff Complement
	Atlantic Provinces	Central Provinces	Western Provinces	Total	
	$	$	$	$	No.
Deans	10,750	16,400	14,750	14,500	98
Professors	9,625	12,518	12,298	12,304	940
Associate professors	7,667	9,395	9,543	9,399	994
Assistant professors	6,172	7,457	7,486	7,420	1,298
Instructors and lecturers	4,692	5,802	5,961	5,812	785
Totals	**6,702**	**8,642**	**8,653**	**8,404**	**4,138**[1]

[1] Includes 23 ungraded professors not distributed above.

Finances.—Since 1952, grants from federal, provincial and municipal governments to a group of institutions representing about 80 p.c. of the total full-time university-grade enrolments have exceeded half of the total current income, less ancillary enterprises. Table **13** gives a historical series of the finances of this group of institutions. The institutions omitted are mainly those conducted by religious orders where teachers receive little or no salary and for which financial returns are consequently not comparable.

13.—Current Income and Expenditure of Universities and Colleges, Academic Years Ended 1948-57

NOTE.—Up to 1953 institutions included represent about 80 p.c. of the total full-time university-grade enrolment. For the years 1954-57 figures given are an estimate of the total current revenue and expenditure of universities and colleges.

Academic Year Ended—	Current Income					Total Current Expenditure
	Endowments and Investments	Government Grants	Student Fees[1]	Miscellaneous	Total[1]	
	$'000	$'000	$'000	$'000	$'000	$'000
1948	2,387	14,863	14,903	4,689	36,842	36,664
1949	2,568	16,218	15,959	4,845	39,590	39,197
1950	2,950	16,959	15,409	5,140	40,458	40,697
1951	3,127	18,733	14,025	4,647	40,532	40,792
1952	3,185	25,284	14,544	5,208	48,221	47,195
1953	2,979	26,554	14,260	6,675	50,468	50,116
1954[r]	3,651	41,786	21,285	9,037	75,759	76,057
1955[r]	4,692	45,107	21,600	8,938	80,337	80,427
1956[r]	5,014	49,911	25,105	10,733	90,763	86,521
1957[r]	4,375	57,118	30,867	10,304	102,664	102,991

[1] Board and lodging not included.

The Federal Government established a system of university grants for current operating purposes, the first of which were paid during the academic year ended 1952. The grants were paid on the basis of 50 cents per head of population in each province, the eligible institutions receiving their shares of the total provincial allotment according to the number of full-time students at university level attending degree or graduate diploma courses. For 1956-57 and 1957-58 the payment was $1 per head of population and in 1958-59 it was increased to $1.50 per head. It should be noted that the Province of Quebec did not accept payment for the years 1952-53 to 1955-56. For 1956-57 and subsequent years, payments refused by Quebec were held in trust by the Canadian Universities Foundation. In 1957-58, one Quebec institution accepted the grant, in 1958-59 two accepted and in 1959-60 all eligible institutions in that province accepted. However, in 1960-61, the Quebec Government reached a tax-sharing agreement with the Federal Government whereby Quebec would make its own grants; 1960-61 data for Quebec are therefore not included in Table **14**, which gives a distribution of payments by province for the academic years ended 1959-61.

14.—Federal Government University Grants, by Province, Academic Years Ended 1959-61

NOTE.—Figures for 1952-55 are given in the 1959 Year Book, pp. 356-357 and those for 1956-58 in the 1960 edition, p. 397.

Province and Academic Year		Institutions	Eligible Enrolment	Total Grants	Grant per Eligible Student
		No.	No.	$	$
Newfoundland	1959	1	1,080	657,000	608.33
	1960	1	1,060	673,500	635.38
	1961	1	1,238	688,500	556.14
Prince Edward Island	1959	2	413	150,000	363.20
	1960	2	525	153,000	291.43
	1961	2	563	154,500	274.42
Nova Scotia	1959	13	4,946	1,065,000	215.33
	1960	13	5,284	1,074,000	203.26
	1961	13	5,802	1,084,500	186.92

14.—Federal Government University Grants, by Province, Academic Years Ended 1959-61—concluded

Province and Academic Year	Institutions	Eligible Enrolment	Total Grants	Grant per Eligible Student
	No.	No.	$	$
New Brunswick.....1959	6	3,340	865,500	259.13
1960	6	3,644	885,000	242.87
1961	6	4,059	900,000	221.73
Quebec[1].....1959	9	29,320	7,326,000	249.86
1960	11	32,153	7,498,500	233.21
1961	...	...	...	...
Ontario.....1959	30	23,984	8,704,500	362.93
1960	30	26,068	8,928,000	342.49
1961	31	28,664	9,133,500	318.64
Manitoba.....1959	8	5,277	1,305,000	247.30
1960	8	5,746	1,327,500	231.03
1961	8	6,233	1,348,500	216.35
Saskatchewan.....1959	13	4,426	1,332,000	300.95
1960	13	4,742	1,353,000	285.32
1961	13	5,474	1,365,000	249.41
Alberta.....1959	5	5,095	1,801,500	353.58
1960	6	5,863	1,864,500	318.01
1961	6	6,810	1,924,500	282.60
British Columbia.....1959	5	10,393	2,316,000	222.84
1960	5	11,289	2,355,000	208.61
1961	5	12,861	2,409,000	187.31
Totals[1].....1959	**92**	**88,274**	**25,522,500**	**289.13**
1960	**95**	**96,374**	**26,112,000**	**270.94**
1961	**85**	**71,704**	**19,008,000**	**265.09**

[1] See text on p. 359 *re* Quebec.

During the 1956–57 academic year, plans were announced by the Federal Government for the distribution of $50,000,000 to Canadian universities and colleges for new construction and capital equipment projects. The grants are made in an amount not exceeding 50 p.c. of the cost of specific building or capital equipment projects, with appropriate regard to the population of each province. The University Capital Grants Fund is administered by the Canada Council, which came into existence on Mar. 28, 1957. Up to Mar. 31, 1960, 41 institutions had been awarded a total of $22,202,073 in capital grants, of which they had received $11,793,545. The Council was also endowed with an additional $50,000,000 for the provision of scholarships and other assistance in the fields of the arts, humanities and social sciences. (See pp. 366–368.)

PART II.—CULTURAL ACTIVITIES RELATED TO EDUCATION

Section 1.—Art and Education*

Fine Art Schools, Galleries and Organizations.—Fine art appears as an elective subject of the faculty of arts in a number of universities, where it may be taken as one of five, six or more subjects for a year or two. In Mount Allison University, N.B., and in the Universities of Saskatchewan and Manitoba, there is a sufficient number of courses to allow the taking of a Bachelor degree with specialization in fine art. At the University of Toronto an Honour B.A. in art history and archaeology is offered, as well as graduate work in this field. Departments of fine art were opened by McGill University in 1948-49, by the University of British Columbia in 1949-50 and by the University of Alberta in 1953-54; McMaster University reopened its department in 1951.

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* Revised under the direction of the Director of the National Gallery of Canada, Ottawa.

There are also schools of art not requiring any fixed academic standing for admission, as they are more concerned with the technical development of the artist. The most widely known of these are:—

Nova Scotia College of Art, Halifax, N.S.
École des Beaux-Arts, Quebec, Que.
École des Beaux-Arts, Montreal, Que.
School of Art and Design, Montreal Museum of Fine Arts, Montreal, Que.
Ontario College of Art, Toronto, Ont.
University of Manitoba School of Art, Winnipeg, Man.
School of Art, Regina College, Regina, Sask.
Provincial Institute of Technology and Art, Banff School of Fine Arts, Banff, Alta.
  (affiliated with the University of Alberta, Edmonton)
Vancouver School of Art, Vancouver, B.C.

Courses in these schools vary in length with the requirements of the individual student but may extend over as many as four years. Summer schools of art are sponsored by some of the foregoing institutions, by universities, and by various independent groups.

Public art galleries in the principal cities perform valuable educational services among adults and children. Children's Saturday classes, conducted tours for school pupils and adults, radio talks, lectures and often concerts are features of the programs of the various galleries. Many of these institutions supply their surrounding areas with travelling exhibitions, and organizations such as the Maritime Art Association, the Western Canada Art Circuit, the Art Institute of Ontario and the Queen's Art Circuit have been founded to carry on the work on a regional basis. The National Gallery of Canada has a nation-wide program of this nature.

The principal art galleries are:—

Beaverbrook Art Gallery, Fredericton, N.B.
Montreal Museum of Fine Arts, Montreal, Que.
National Gallery of Canada, Ottawa, Ont.
Public Library and Art Museum, London, Ont.
Art Gallery of Toronto, Toronto, Ont.
Art Gallery of Hamilton, Hamilton, Ont.
Winnipeg Art Gallery, Winnipeg, Man.
Norman Mackenzie Art Gallery, Regina, Sask.
Edmonton Art Gallery, Edmonton, Alta.
Calgary Allied Arts Centre, Calgary, Alta.
Vancouver Art Gallery, Vancouver, B.C.
Art Gallery of Greater Victoria, Victoria, B.C.

Other Art Organizations.—The leading art organizations of national scope, exclusive of museums and art galleries, include the following:—

Association of Canadian Industrial Designers
Canadian Arts Council
Canadian Group of Painters
Canadian Guild of Potters
Canadian Handicrafts Guild
Canadian Museums Association
Canadian Society of Graphic Art
Canadian Society of Painter-Etchers and Engravers
Canadian Society of Painters in Water Colour
Canadian Society of Landscape Architects and Townplanners
Community Planning Association of Canada
Federation of Canadian Artists
Royal Canadian Academy of Arts
Royal Architectural Institute of Canada
Sculptors Society of Canada.

The National Gallery of Canada.—The National Gallery was founded in 1880 by the Marquis of Lorne, then Governor General of Canada, and at first served only as an exhibition gallery. In 1907 it was provided with an Advisory Arts Council and in 1913 was first incorporated under a Board of Trustees. Since then it has assembled a permanent collection of pictures and sculpture, prints and drawings, representing the styles, past and present, of various parts of the world, intended for the enjoyment of the public and the improvement of arts and industrial products, and to form the basis of a program of art education. The National Gallery Act, amended in 1951, gave the institution a larger Board of Trustees and other advantages.

The collection of the National Gallery today is of international repute and is accessible to the whole country by means of catalogues, photographs, colour reproductions and, to a limited extent, by loans. The Canadian section, naturally the most inclusive, is the best available source for the study of Canadian art. Each year, examples of the best contemporary work are added, along with those of earlier periods.

The Gallery conducts a nation-wide program of extension. It has prepared about 45 special exhibitions, the majority of which are available to the entire country and are widely circulated. As many as 200 separate showings have been held annually. In addition, individual loans of material from the collection are made to centres in many parts of the country each year. In this way original works of art are constantly being brought to the attention of the public. Sets of reproductions are also sent on tour of localities that have not the facilities for handling originals. Under the auspices of the Gallery, internationally known authorities lecture across Canada.

The Gallery also provides special educational services. The Education Officer regularly conducts informal lectures and guided tours to the collections—a monthly average of 80 groups request such tours and lectures. Other educational services include exhibitions of reproductions and photographs accompanied by didactic texts and the production of filmstrips on Canadian artists. The Gallery maintains a collection of films and filmstrips on art. Information concerning recent purchases, exhibitions and lecture tours arranged by the Gallery are contained in the *Annual Report of the Board of Trustees* and facsimile colour reproductions available to the public are listed in leaflets procurable on request.

The National Gallery is now housed in the new Lorne Building located in central Ottawa, easily accessible to residents and visitors.

Section 2.—Museums and Education

Modern museums, in Canada and elsewhere, are breaking away from the old concept of repositories and are assuming an important role as educational and cultural centres. Canadian museums of history and science offer many educational services to the public in addition to providing exhibits that are both interesting and informative. The following museums have staff members who are specifically charged with organizing programs in education and extension services:—

Nova Scotia Museum, Halifax, N.S.
McGill University Museum, Montreal, Que.
National Museum of Canada, Ottawa, Ont.
Royal Ontario Museum, Toronto, Ont.
Saskatchewan Museum of Natural History, Regina, Sask.

Other museums that conduct educational and extension programs using the regular curatorial and administrative staff are:—

The New Brunswick Museum, Saint John, N.B.
Museum of the Province of Quebec, Quebec, Que.
The Manitoba Museum, Winnipeg, Man.
Provincial Museum of Natural History and Anthropology, Victoria, B.C.

Direct work with schools may involve the holding of classes within the museum or visits of museum lecturers, with exhibits, to the schools. More informal are the guided tours for visiting school classes, the loan of specimens, slides, filmstrips or motion picture films to schools, and the training of student-teachers in the educational use of the museum. A number of museums have special programs for children, not directly associated with school work. These include Saturday lectures and film showings, activity groups, nature clubs, and field excursions.

For adults, museums offer series of lectures or film showings from autumn to spring, and possibly some special showings during the tourist season. Guided tours for adult groups are usually available throughout the year. Staff members may be sent to give lectures to service clubs, church groups, parent-teacher associations, and hobby clubs. The latter, such as naturalists' groups, mineral clubs and astronomy societies, may use the museum as their headquarters. Travelling exhibits are prepared for showing at local fairs, historical celebrations and conventions. At least seven Canadian museums have had regular radio or television programs, and others have made occasional contributions. Some historical museums have annual events during which the arts, crafts or industries represented by the exhibits are demonstrated to the public.

Through such activities and methods, Canadian museums serve as important adjuncts to the educational system and as centres for informal education, both juvenile and adult. Thus, they take their place with public libraries as major auxiliaries in the educational program of Canada.

Section 3.—The Educational and Cultural Functions of the Canadian Broadcasting Corporation

Many hours of educational or semi-educational programs are broadcast annually by the Canadian Broadcasting Corporation in English and in French. Whether these programs are directed to children or adults, entertainment is combined with information whenever possible. Spoken-word programs, presented as readings, talks, discussions, documentary programs, dramatizations or in forms combined with music, cover a very wide range of interests.

Pre-School Broadcasts.—A number of programs are planned for children from three-and-a-half to six years of age. The aim is to have these at the same time educational and entertaining. Both *Kindergarten of the Air* (radio) and *Nursery School Time* (television) base their planning on the advice of kindergarten and nursery school experts. The topics acquaint the child with new and interesting aspects of life about him in his home and in his community. *Kindergarten of the Air* has the added purpose of bringing the benefits of kindergarten training to those living in remote areas.

The English television network regularly carries the production *Chez Hélène* to introduce the French language to the pre-school child by means of the successful Tan-gau method of instruction. In another television series, *The Friendly Giant*, a highly popular story-telling program, is combined with an effort to develop in the child an awareness of social values.

School Broadcasts.—The CBC provides an active schedule of school broadcasts which are planned according to recommendations made to the School Broadcasts Department by a group of educators representing each of the provincial departments of education. This body is known as the National Advisory Council on School Broadcasting. The programs produced have the aim of enriching the curricula and of making it possible for the student to do things or see things which would be impossible in the classroom. For example, the radio dramatization of *Julius Caesar* for senior students assisted the schools in achieving a more vital appreciation of Shakespearean drama; the television series, *Where History Was Made*, transported the child by means of film to a historical site where he saw an important event in Canada's history re-created; a series on contemporary music showed the student how an artist is affected by the rhythm and mood of life around him.

Other Programs for Children.—Other programs are presented for children which do not relate to a specific school curriculum but have a broadly educational or informational purpose. The program *Junior Magazine* for children of nine to fourteen years of age has specific segments depicting Canadian life and the new world of science. Programs are devoted to musical concerts presented by young artists of talent and competence. For these programs, a CBC Youth Choir has been formed which also appears in instructional programs arranged by the School Broadcasts Department. On the French network, programs such as *Domino* and *Les Apprentis* were arranged to fulfil a purpose similar to that of *Junior Magazine.*

A number of experiments in programming for both the English and French networks have begun, such as the natural science program, *La vie qui bat,* which appears in English under the title, *This Living World.*

Adult Education.—Programs of an adult education nature are presented frequently by the CBC on its radio and television services, in the planning of which co-operation is received from various educational organizations. The CBC is an active participant in the work of the Joint Planning Commission, a body established by the Canadian Association for Adult Education for exchange of information and co-ordination of plans for adult education in Canada.

Citizens' Forum, a series telecast for the past five years, is a round-table program on which a panel of informed speakers who hold varying viewpoints discuss important issues of the day. It is arranged jointly by the Canadian Association for Adult Education and the CBC. Its French counterpart, *Les idées en marche,* has been planned in co-operation with La Société canadienne d'éducation des adultes. Similar types of programs are prepared specially for rural listeners, such as *National Farm Radio Forum,* which is arranged by the CBC in co-operation with the Canadian Federation of Agriculture and the Canadian Association for Adult Education. All these forum programs are heard by organized listening groups which continue the discussion of the topic at the conclusion of the program. *Le Réveil rural* on radio, and *Travaux et les jours* on television, are French-language counterparts of the English farm programs.

For the past nine summers the evening sessions of the Couchiching Conference have been broadcast. This week-long conference, organized jointly with the Canadian Institute on Public Affairs, examines Canadian and international affairs in open meetings and group discussions. On the French television and radio networks, annual sessions of L'Institut canadien des affaires publiques are broadcast. Other programs of an educational nature are *Soundings,* a series of radio documentaries dealing with community and social affairs; various dramatized series in the field of human relations and mental health; *Science Review,* which examines important discoveries in the field of the natural sciences and their branches; *Business Barometer,* designed to inform listeners of the developments in Canada's economic life; *Anthology,* a literary program with emphasis on Canadian writers; *Time for French,* a program designed to interest English-speaking listeners in the French language; *Trans-Canada Matinée,* a daily afternoon program including informative talks and commentaries designed specially for the woman in the home; *University of the Air,* a series varying from four to eight talks prepared and broadcast by distinguished professors in their particular fields; and, on the French radio network, *L'Université radiophonique internationale,* a series of talks exchanged with other countries on cultural and scientific subjects.

On the French network, *Les Chansons de la maison* presents a series of programs relating to parents and children, and general questions sent in by parents are answered by psychologists. For women listeners, the daytime program *Femina* is presented three times a week. The French network also broadcasts a number of weekly programs dealing with fine arts, music, literature, theatrical arts, sciences, religion and philosophy, under the auspices of Le Service des émissions éducatives et d'affaires publiques.

In addition to *Citizens' Forum*, programs carried regularly on both radio and television are *Encounter*, a series of interviews with people who are eminent in the arts and public life; and *Fighting Words*, in which guests who are experts in various fields discuss controversial quotations sent in by viewers. *Open House*, a daily television program for women, presents information on a wide variety of commodities and services, and interviews with people of note; its French network equivalent is *Bonjour Madame*. *Close-Up* and *Premier Plan* present weekly half-hour interview and documentary programs in which the emphasis is on the persons involved. Significant issues, events and ideas, both international and domestic, are considered each week on *Background*. *Explorations*, a series of drama documentaries which examines questions in the fields of sociology and history, was one of eleven CBC programs to win First Awards at the Exhibition of Educational Radio and Television Programs at Columbus, Ohio. *The Nature of Things* describes the attitudes and work of scientists and science for an audience whose only preparation may be curiosity about the world about them. Programs in the field of parent education and mental health are also broadcast. Portions of afternoon sessions of the Winter Conference of the Canadian Institute on Public Affairs are also telecast. This three-day weekend conference examines sociological questions in open meetings and group discussions.

Section 4.—The Educational and Cultural Functions of the National Film Board

The National Film Board, an agency of the Federal Government, was established by Act of Parliament in 1939 and reconstituted by the National Film Act in 1950. In the years since its establishment, the Board has grown from a supervisory body over Canadian Government motion picture activities to a national documentary film-producing and -distributing organization whose films about Canada are seen wherever people may freely assemble. The Board also produces and distributes filmstrips and still photos on Canadian themes in accordance with its primary function outlined in the Act "to initiate and promote the production and distribution of films in the national interest". Films are produced primarily in the English and French languages and, whenever possible, foreign language versions are prepared to increase the usefulness of Board films in foreign countries.

The 16mm. community film program in Canada is based on a nation-wide system of film circuits, film councils and libraries, strongly supported by organizations and individuals engaged in community activities. At present, there are more than 700 national, provincial and community film distribution outlets from which thousands of 16mm. prints are available for public use throughout the country. These prints are acquired for circulation by purchase or by loan from the Board.

More than one-half of the 16mm. community film audience recorded by the Board during 1960 was reached through classroom showings, indicating further progress in the development of audio-visual aid programs in Canadian schools and universities. Another noticeable trend was the more selective use of films by community organizations and groups for particular purposes. This is attributed in part to the availability of Board productions which present series of film studies related to central themes, and to the availability of a broad range of topics which include individual films particularly suited to group objectives and programs.

Films produced by the Board are shown in commercial theatres and on television in Canada and abroad. Films are released domestically in the series *Canada Carries On* (*En Avant Canada* and *Coup d'Oeil* in French), and newsreel features are also issued regularly for theatrical and television purposes. Distribution of theatrical subjects is arranged by contract with commercial distributing organizations.

An increasing proportion of the Board's production and distribution program is initially concerned with television at home and abroad. Series of original films are shown regularly over English and French language television networks in Canada. Individual films from the Board's extensive general library are available to CBC and privately operated stations. Abroad, because of expanding television facilities in many countries, Board films are seen by audiences which could not otherwise be reached.

In addition to commercial distribution through theatres and television in other countries, 16mm. print circulation is carried on through posts of the Departments of External Affairs and Trade and Commerce, through National Film Board territorial offices at London in England, New York and Chicago in the United States, New Delhi in India, and Buenos Aires in South America, as well as through libraries operated by various education agencies. Hundreds of prints of National Film Board films are also sold in other countries each year. Exchange agreements are in effect between the Board and government film-producing organizations in other lands; this means that films of various nations are freely exchanged with Canada, aiding better international understanding.

The National Film Board maintains a library of more than 150,000 still photographs, which are available at nominal cost to magazines, newspapers and other periodicals wishing to present current information about Canada.

Section 5.—The Canada Council

During the postwar years in Canada it was felt that it would be in the national interest to give encouragement to institutions expressing national feeling, promoting common understanding and adding to the variety and richness of Canadian life. The Royal Commission on National Development in the Arts, Letters and Sciences was accordingly appointed in 1949 to recommend the most effective means of supporting such institutions. The Commission reported that almost alone among the major nations of the world, Canada had no government-supported body to assist the arts, no executive body to deal with the question of Canada's cultural relations abroad, no clearing house or centre of information on the arts and no national commission for UNESCO.

As a result of recommendations made by the Massey Commission, the Canada Council was established in 1957 to promote the study and enjoyment of, and the production of works in the arts, humanities and social sciences. A sum of $100,000,000 from the public treasury was granted to the Council to enable it to carry out its program. Half of this sum was placed in a University Capital Grants Fund to assist institutions of higher learning to expand their building facilities in the arts, humanities and social sciences. The remaining $50,000,000 was set up as an Endowment Fund which provides a guaranteed annual income of about $2,700,000.

The Council is made up of 19 members appointed by the Prime Minister for terms of three years plus a Chairman and Vice-Chairman who are selected for five-year terms. Members are ineligible for reappointment during the 12 months following their second consecutive term on the Council. The organization must meet at least three times a year under its Chairman, Dr. Claude Bissell, and Vice-Chairman, the Very Reverend G.-H. Lévesque, to consider applications made to it by organizations and individuals across the country. The day-to-day administrative work is carried out by a permanent staff in Ottawa under the Director, Dr. A. W. Trueman, and Associate Director, Mr. Eugène Bussière.

University Capital Grants Fund.—One of the principal responsibilities of the Council is toward this country's institutions of higher education. It has been estimated that in the next decade university facilities will have to be about doubled. Of some 100 colleges polled by the National Conference of Canadian Universities and Colleges in 1959, only nine reported no immediate plans for expansion. The University Capital Grants Fund was established to help meet this need.

The Fund enables the Council to make grants to universities and other institutions of higher learning by way of capital assistance in respect of building projects, with the following limitations: (1) a grant for any one project may not exceed one-half the total expenditures made in respect of that project; (2) in any province the aggregate of the grants made may not exceed an amount that is in the same proportion to the aggregate amount credited to the University Capital Grants Fund as the population of the province (latest census) is to the aggregate population of the provinces in which there is a university or other similar institution of higher learning.

By the end of 1960, $22,000,000 had been authorized for payment by the Council. A total of 41 institutions had drawn upon the Fund for a wide variety of buildings with libraries, classrooms and residences claiming the major share. The decision to consider residences eligible for assistance was made after lengthy consultation with the universities themselves. It was generally felt that such buildings were more than mere boarding houses and constituted an integral part of the educational facilities of our universities.

Aid to Individuals.—It has been estimated that, to maintain academic standards at the present level, Canada will have to produce between 8,000 and 10,000 university teachers in the next ten years. In 1957, less than 10 p.c. of the graduate fellowships available in Canada were for studies in the humanities and social sciences. The Canada Council therefore allocated over $1,000,000 from the income of the Endowment Fund to the establishment of a scholarship and fellowship program to help remedy this situation. In three years more than 1,200 scholars have been aided through awards at the master's, doctorate and post-doctorate level. A further stimulus to academic pursuits is provided in other ways by the Council. Grants are made to universities to enable them to bring outstanding lecturers to their campuses. Travel grants are awarded to permit Canadians to attend international conferences and thus maintain contact with scholars from other countries.

Individual assistance is also given in the arts by the Council. By the end of 1960, about 360 scholarships had been awarded to enable singers, dancers, painters, writers and other creative artists to continue their studies or perfect their arts. Other artists had benefited from the Council's program of commission grants. Such grants enable theatres, orchestras, soloists, art galleries or museums to commission and perform or display original works by Canadian artists.

Aid to Organizations.—However, the Council's responsibility does not end with its assistance to the individual; the Council must also seek to create a wider market and a more receptive audience for the works of the country's creative talents. Accordingly, a large proportion of the revenue from the Endowment Fund is devoted to a program of assistance to organizations in the arts and letters. Since income from this source is strictly limited, the Council must decide whether it will support the best, which would involve a very large investment in some of the major population centres, or whether it will attempt to cover all areas of the country—a policy which, if carried to its full extent, would rapidly exhaust the funds available.

The Council has therefore sought to strike a balance between the two aims by combining grants for excellent service in local or regional areas with awards to enable organizations to travel to remote parts of the country where the arts are less readily available. It also seeks to ensure local support by insisting that organizations receiving Council grants find additional revenue from other sources. In the year ended Mar. 31, 1960, the Council gave about $1,250,000 to organizations in the arts, humanities and social sciences. Ten symphony orchestras received a total of $206,000 and a further $64,000 went to other musical organizations including choirs, string orchestras and chamber ensembles. More than $40,000 was spent to enable music groups to tour and $7,400 was awarded to permit the commissioning of new works. Over $350,000 was granted to promote the theatre, opera and ballet. The bulk of this, some $145,000, went to the National Ballet Company of Canada, the Royal Winnipeg Ballet and Les Grands Ballets Canadiens. A total of $72,000 went toward helping opera and $132,000 was awarded to the theatre. Festivals in Stratford, Vancouver and Montreal received $160,000 in assistance from the Council and a sum of $52,000 was allocated to the Canada Council Train and the Student Theatre Project, both activities designed to introduce more Canadian students to the best Shakespearean drama. The visual arts received about $143,000 and $43,000 was awarded in aid to publication, bringing to just over $1,000,000 the amount spent on the arts.

Considerably less assistance went to organizations in the humanities and social sciences since the bulk of the scholarship program is directed toward these subjects. Aid was given to visiting lecturers, to publications and to several academic projects. Altogether $123,000 was given for these purposes.

UNESCO.—The Act establishing the Canada Council also provided that the organization should undertake certain functions in relation to the United Nations Educational, Scientific and Cultural Organization. The Council accordingly established a National Commission for UNESCO with 26 members and approximately 30 organizations with "co-operating body status". The Council also provided the secretariat for the Commission. With the assistance of the National Commission, the Council is responsible for the co-ordination of UNESCO program activities in Canada, for Canadian participation in UNESCO program activities abroad, and for proposals for future UNESCO programs. In all these matters the Council works in close association with the Department of External Affairs and serves as the normal channel of communication between the Department and the Commission. In the fiscal year ended Mar. 31, 1960, the Council spent close to $35,000 in addition to indirect administrative expenses on the UNESCO program.

Section 6.—Library Services

The National Library.—The National Library of Canada, which came into existence on Jan. 1, 1953, is governed by an Advisory Council of 15 members, representing all provinces. The National Librarian and his staff are responsible for the cataloguing and expansion of a book collection; the publication of *Canadiana*, a monthly catalogue of new books and pamphlets relating to Canada; and the compilation and servicing of the National Union Catalogue.

In 1960, the book collection consisted of about 210,000 catalogued volumes and 115,000 micro-copies of early, rare, and out-of-print items. In addition, many volumes acquired from the Library of Parliament remain to be catalogued. Under the terms of the Book Deposit Regulations and the Copyright Act, 2,709 titles were received in 1959-60. Besides Canadian material, the library is specializing in the collection of publications in the fields of the humanities, music and the social sciences. Because the National Library is still in temporary quarters with a scarcity of space, the collection includes only books, pamphlets, official publications, and a very limited selection of periodicals. Eventually, it is expected that the Library will collect systematically and preserve the total output of the nation's publishers.

Canadiana published a total of 9,230 items in 1959, consisting of trade and general publications, and official publications of the federal and provincial governments. In January 1960, the *Canadiana* section of the National Library began a service to librarians, publishers and booksellers, consisting of a listing of all new Canadian imprints, with brief descriptions, to be published monthly in *Quill and Quire*, the magazine of the Canadian book trade. While these entries do not provide the bibliographical detail published later in *Canadiana*, they do supply useful, current information on Canadian publications.

The National Union Catalogue lists approximately 7,500,000 volumes in 159 important government, university and public libraries in all provinces. New accessions are reported regularly by the libraries and a systematic program of expansion provides for the addition of the contents of more libraries as facilities permit. During the year ended Mar. 31, 1960, the Reference Division was asked to locate 9,691 titles, and requests for other information brought the total number of inquiries to 10,711, as compared with 9,096 in 1958-59. Inquiries on scientific and technical subjects are in the lead, and 80 p.c. of the titles requested in 1959-60 were published since 1925.

Publications of the National Library, besides *Canadiana*, include the annual accumulation of the *Canadian Index to Periodicals and Documentary Films*, *Canadiana Selections*, and a *Bibliography of Canadian Bibliographies*.

Public Libraries.—Library service is provided for the Canadian public through several types of organization, depending on the population density of the area.

The majority of Canadians live in urban municipalities and are served by free tax-supported libraries, some with extensive branch systems. A few of the larger centres and many of the smaller municipalities are served by non-profit association public libraries, privately controlled and operated. A wide range of special services includes reference collections for business and industry, reading clubs, lecture series, art displays and services to schools which supplement the basic reference and circulation collections for children and adults in these larger centres.

A trend toward regional and co-operative library service is apparent as more effective forms of organization are sought to meet the library needs of both urban and rural populations. In 1959, 54 of the larger municipal public libraries reported extension of services beyond municipal boundaries, either by formal contract with neighbouring municipalities or by informal arrangement with non-residents. The establishment and growth of regional libraries in all provinces except Quebec is stimulated and encouraged by grants from provincial government agencies, and during the 1950's the number of regional libraries in Canada rose from 16 to 34. These libraries bring together the resources of a number of small communities within a specified area to provide funds, quarters, stock and staff of a higher standard than each could maintain by itself. Bookmobiles and other forms of mobile service bring skilled librarians and good books for children and adults to depots in schools and other convenient centres in the participating communities. The Public Library Commission of Quebec, set up in December 1959, is studying the library needs of the province with a view to regional organization and regional libraries are being planned for the Yukon and Northwest Territories.

Provincial public library services, operated on a province-wide basis by provincial government authorities, serve sparsely populated areas by bookmobile, rail, boat and aircraft. Travelling libraries, consisting of boxed collections of books for all ages, are sent out to small groups on request, books dealing with specific subjects are sent out to individuals on request and other forms of library service are tailored to the needs of certain areas.

All public libraries in Canada are experiencing increased demands for their services, especially from children of five to 14 years of age who, representing 20 p.c. of the population, borrowed 46 p.c. of all the books circulated in 1959. Stocks of books, pamphlets and periodicals are increasing, and new buildings, extensions and remodellings are being planned, although expansion is limited by a shortage of professional librarians.

DBS surveys of libraries for the year 1959 covered provincial public library services, regional and co-operative libraries and public libraries in centres with over 10,000 population. The data thus secured were supplemented by information from provincial officials on libraries in smaller centres. Table 1 represents estimates for all public libraries in Canada.

1.—Summary Statistics for All Public Libraries, 1959

Province and Service	Population Served	Libraries	Stock of Books, Periodicals and Pamphlets	Circulation	Current Operating Payments	Full-Time Staff
	No.	No.	No.	No.	$	No.
Newfoundland—						
Provincial	450,000	1	200,989	485,698	157,653	10
Municipal	80,000	1	55,015	141,170	..	12
Prince Edward Island—						
Provincial	103,000	1	104,744	171,044	39,805	7
Municipal	16,707	1	13,011	36,507	17,325	4
Nova Scotia—						
Regional	351,589	5	226,170	1,386,869	321,432	60
Municipal	151,717	4	122,068	525,847	153,069	30
New Brunswick—						
Provincial	..	1	17,542	49,495	..	7
Regional	94,545	2	54,999	253,992	64,784	13
Municipal	126,015	2	108,507	344,722	89,715	17
Quebec—						
Provincial	1,720,758	2	282,311	110,109	139,300	18
Municipal and association[1]	2,880,368	312	1,666,570	3,334,101	1,215,162	223
Ontario—						
Provincial	110,000[2]	1	72,000	76,000	59,250	8
Regional and co-operative	1,149,010	15	351,081	2,250,438	299,744	38
Municipal and association	4,633,673	481	6,740,175	25,378,026	7,671,968	1,153
Manitoba—						
Provincial	400,000	1	32,500	102,000	49,000	8
Regional	20,113	6	16,209	59,333	33,327	7
Municipal and association	424,100	9	325,948	1,849,172	540,622	92
Saskatchewan—						
Provincial	600,000	1	112,662	137,292	117,878	18
Regional	53,000	1	62,593	213,683	81,359	6
Municipal and association	368,827	80	570,756	1,724,183	588,195	93
Alberta—						
Provincial	500,000	1	48,101	178,248	67,395	13
Regional	62,516	2	69,529	234,358	72,534	1
Municipal and association	707,892	138	878,090	3,320,556	901,918	175
British Columbia—						
Provincial	300,000	2	198,885	163,506	155,377	22
Regional	357,657	3	330,780	2,132,924	357,657	55
Municipal and association	929,850	43	1,058,974	6,311,243	2,026,282	368
Yukon—[3]						
Association	4,170	4	14,637	11,380	1,154	—
Northwest Territories—						
Association	8,253	10	15,000	..	3,613	—
Totals—						
Provincial	**4,183,758**	**11**	**1,069,734**	**1,473,392**	**785,658**	**111**
Regional and Co-operative	**2,088,430**	**34**	**1,111,361**	**6,531,597**	**1,230,837**	**180**
Municipal and Association	**10,331,572**	**1,085**	**11,568,751**	**42,976,907**	**13,209,023**	**2,167**
Grand Totals—						
1959[4]	**15,208,752**	**1,130**	**13,617,895**	**50,420,677**	**15,043,634**	**2,424**
1958[4]	**12,304,003**	**842**	**12,405,416**	**45,879,335**	**13,318,206**	**2,381**

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[1] Data on public libraries in centres under 10,000 population are for 1960 (supplied by the Quebec Public Library Commission). [2] Borrowers only. [3] 1956 figures. [4] Excludes duplication.

Academic Libraries.—Centralized libraries in larger Canadian universities and schools served nearly 750,000 students in the academic year 1958-59. Information was gathered by the DBS from university and college libraries serving enrolments of 500 or over and, for the first time, from centralized school libraries serving 666 to 680 pupils in publicly controlled elementary, intermediate and secondary schools.

The 32 university libraries surveyed reported a total stock of 6,040,556 volumes, or 75 per full-time student. Current operating expenditures of the libraries amounted to $4,022,494, or $48.20 per full-time student. Centralized school libraries serving centres of 10,000 population or over reported a total stock of 2,898,780 volumes, or 4.5 per pupil served. About one school in three provided centralized school library service, representing just over 40 p.c. of the enrolment in the schools surveyed.

2.—Book Stocks in the Larger Academic Libraries and Enrolment Served, by Province, Academic Year 1958-59

Province	University and College Libraries			Centralized School Libraries		
	Libraries	Volumes	Enrolment Served	Libraries	Volumes	Enrolment Served
	No.	No.	No.	No.	No.	No.
Newfoundland	1	49,512	1,080	4	3,852	2,373
Prince Edward Island	—	—	—	3	3,069	1,528
Nova Scotia	3	324,758	3,541	31	21,771	17,175
New Brunswick	2	183,188	2,611	27	52,416	16,300
Quebec	7	1,744,423	28,228	328	526,579	183,292
Ontario	13	2,555,496	24,504	338	1,227,784	246,142
Manitoba	2	315,107	4,350	58	192,145	38,649
Saskatchewan	1	175,100	3,807	26	69,760	10,322
Alberta	1	216,117	5,070	99	283,660	44,818
British Columbia	2	476,855	10,268	144	517,744	106,081
Totals	**32**	**6,040,556**	**83,459**	**1,058**	**2,898,780**	**666,680**

Professional Librarians.—Acute shortages of professional librarians are reported by all types of libraries, as compared with standards set by the Canadian Library Association. For example, the CLA recommends, for public libraries, one professional librarian in 1959, compared with the actual number of 684 reported by the public libraries for that year. Similar shortages in other types of libraries accentuate the problem, since all draw on the relatively small number of graduates of Canada's four degree-granting library schools.

Measures taken to combat the shortages of professional librarians include salary increases in various types of libraries, and recruitment campaigns. Increases in 1959 over 1958 in median salaries of librarians in public and university libraries amounted to 10.4 p.c.

3.—Median Salaries of Librarians in Professional Positions, 1958-59

Position	Public Libraries in Centres over 10,000 Population	Regional and Co-operative Public Libraries	Provincial Public Library Services	University and College Libraries	Total Professional Librarians
	$	$	$	$	No.
Chief Librarian	5,250	4,750	6,166	8,143	160
Assistant Chief Librarian	4,688	4,750	4,667	7,000	75
Division, Department or Branch Head	5,208	3,938	5,250	5,361	356
General Librarian	4,300	3,875	3,500	4,065	620

The number of graduates of the four Canadian Library Schools—at the Universities of McGill, Toronto, Montreal and Ottawa— was 33.7 p.c. higher for the academic year 1959-60 than the average for the preceding five years, and enrolments for 1960-61 indicate an even more pronounced increase for that year. Of the June 1960 graduates, 107 of whom were awarded Bachelor of Library Science degrees, 81 p.c. were women and one in four of these was married. More than 70 p.c. had specialized in English, history or languages during their undergraduate studies and almost half had worked in some type of library before enrolling in Library School. After graduation, 41.6 p.c. of the graduates reporting took positions in public libraries, 38.6 p.c. went to university and college libraries, 5.5 p.c. to school libraries and 13.9 p.c. to special libraries. The median beginning salary of all graduates who reported was $4,400.

PART III.—SCIENTIFIC AND INDUSTRIAL RESEARCH

Section 1.—The National Research Council*

History and Organization.—Organized research in Canada on a national basis dates from 1916 when the Government of Canada established the Honorary Advisory Council for Scientific and Industrial Research under a Committee of the Privy Council. Provision was made for the planning and integration of research work, organization of co-operative investigations, postgraduate training of research workers, and prosecution of research through grants-in-aid to university professors. This was the basis of the Council's work from 1916 to 1924.

A Special Committee of Parliament, appointed to study a recommendation for establishing national laboratories, endorsed the proposal and the Research Council Act was revised by Parliament in 1924. Temporary laboratories were secured and research on utilization of magnesian limestone for refractories was carried out so successfully that a wartime industry, established during World War I, was re-established on a large scale. As a result of this achievement the Government, in 1929–30, provided funds for new laboratories.

The National Research Building on Sussex Drive, Ottawa, was opened in 1932, and in 1939 construction was begun of an aerodynamics building on a 130-acre site on the Montreal Road just east of the city. Later, other buildings were erected on this site, including woodworking and metalworking shops and separate laboratories for research on engines, gas and oil, hydraulics and structures. These facilities have since been enlarged and extended and new buildings have been provided for engineering, low-temperature studies and high-speed aerodynamics. In 1952 a cosmic ray laboratory, a thermodynamics building, and a large structure to house the Division of Applied Chemistry were added; in 1953 the Building Research Centre was completed. The same year, development began on a new 250-acre site on the opposite side of the road, where headquarters for the Radio and Electrical Engineering Division was constructed. In 1958, a unique Fire Research Laboratory was added to this site as part of the facilities of the Division of Building Research. An underpass connects the two areas.

A Prairie Regional Laboratory built on the University of Saskatchewan campus has been in operation since June 1948 and an Atlantic Regional Laboratory, on the campus of Dalhousie University at Halifax, N.S., was opened in June 1952. The Division of Building Research has established one of the most northerly building research stations in the world at Norman Wells, N.W.T. Completing its long-term plan for regional activities, the Division has also established a small Pacific Regional Station at Vancouver, in co-operation with the British Columbia Research Council.

A Medical Research Council, fully responsible for policy in the field of medical research but functioning under the general administration of the National Research Council, was established in November 1960 (see p. 390).

The National Research Council consists of the President, two Vice-Presidents (Scientific), one Vice-President (Administration) and 17 other members, each of the latter group being appointed for a term of three years and chosen to represent industry, labour or research in one of the basic natural sciences. Many of the members are drawn from the science departments of Canadian universities.

The Council's scientific and engineering activities are organized in nine divisions and two regional laboratories, each with its own director. Five laboratory divisions are concerned with fundamental and applied studies in the natural sciences—applied biology, applied and pure chemistry, and applied and pure physics. Four others are devoted chiefly to engineering work—building research, mechanical engineering, the National Aeronautical Establishment, and radio and electrical engineering.

Links with Industry.—In addition to its basic research foundations, the Council operates a Technical Information Service. Through a trained research staff, using the extensive library facilities available to the Council, it is usually possible to provide any required information at very short notice. A free and constant flow of personnel and information is maintained between the Council laboratories and industrial laboratories, the aim being to have Canadian industry use the Council's laboratories just as the units of a large company use their own laboratories as a source of scientific information and assistance. The Council also undertakes for any firm, under contract, research problems that cannot be solved by private consulting and testing laboratories and, in return, obtains assistance from many companies. The Council has long-standing and intimate contacts of this co-operative kind with many Canadian industries in various fields.

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* Prepared by R. A. Lay, Public Relations Office, National Research Council of Canada, Ottawa.

Associate committees were established by the National Research Council early in its history and have been continued to date. Hundreds of specialists have accepted invitations from the Council to serve on committees and have brought their knowledge and experience to bear on the solution of research problems put before them. Members of committees give their time and effort to these special studies without charge and their assistance is a source of great strength to the Council.

Foundation Aspects.—Assisted research grants have been made by the Council since its inception in 1916. These awards are given to staff members in the science and engineering departments of Canadian universities to purchase needed equipment and to employ junior helpers, often students. Aid of this kind has been of considerable assistance in enabling the universities to put into operation the excellent graduate schools that now exist in Canada. In the year ended Mar. 31, 1961, more than $6,875,000 was provided out of Council funds for basic research at Canadian universities.

Scholarships and grants-in-aid of research are awarded annually by the National Research Council. Scholarships awarded in science and engineering include Bursaries and Studentships with values of $1,800 and $2,200 respectively, Special Scholarships valued at $2,200 and Postdoctorate Overseas Fellowships at $3,500 (single) and $4,500 (married). Graduate Dental Research Fellowships are also available. In the year ended Mar. 31, 1961, 597 of these different awards totalling more than $1,409,000 were made.

Since 1948, the National Research Council has awarded postdoctorate Fellowships in open competition to Canadians and nationals of other countries, which are tenable in the Council's own laboratories. The diversity of training and experience brought to the laboratories by these young scientists has had such a stimulating effect on the research effort that the program has been expanded in recent years. Fellowships are also tenable in the science departments of Canadian universities, in the laboratories of Atomic Energy of Canada Limited, and in the federal Departments of Agriculture, Mines and Technical Surveys, and National Health and Welfare. More than 200 of these awards are being held at the present time (March 1961), mostly in the fields of chemistry, physics and biology.

Applied Biology.—This Division's program covers practical problems related to the national economy, and fundamental studies in microbiology, biochemistry and biophysics as a basis for future application in agriculture, medicine and industry.

Problems of preparing, preserving and storing food constitute a large part of the Division's work, with particular attention in recent years to food freezing, cold storage and refrigerated transport. Specific studies in 1960-61 involved changes effected in foods during freezing and frozen storage, the design and performance of refrigerated trailer-transports, aeration of fermentations, and controlled-atmosphere storage of fruit. Micro-organisms related to the preservation and preparation of food are also studied, and a national culture collection of about 3,000 yeasts, bacteria and fungi is maintained.

The Division for some years has been investigating the physiological and biochemical changes in mammals, birds and man in adapting to cold. As the most recent part of this study, an international expedition under NRC leadership was carried out in the winter of 1960 on cold adaptation in the Eskimos of Cumberland Sound. No important differences between the Eskimos and white control subjects were found, indicating that because of the Eskimos' excellent clothing and Arctic technology, they do not show any major adaptive changes.

Another long-term project has involved basic studies of cellulose, the most abundant biological substance in green plants and bacteria, and of the ribonuclein particle which is responsible for producing all proteins in living cells. During 1960-61 the precursor of cellulose was isolated for the first time, purified, and its composition determined, while the ribonuclein particle was shown to consist of at least sixteen new proteins. Studies on the hemicelluloses of hardwoods and coniferous woods have provided considerable information of practical use in the pulp and paper and rayon industries. Important information has also been obtained on the structure of the protein hemoglobin and of proteins in general.

Applied Chemistry.—The Division of Applied Chemistry is concerned with supplying new scientific information for the development of Canada's natural resources and chemical industries. Although formerly much of the work involved solving immediate, specific problems, a larger part of the Division's effort is now being devoted to more basic studies. This avoids conflict with industrial laboratories and consultants and, in addition to providing fundamental information, often produces practical results.

For instance, a long-term investigation on the contacting of fluids and solids—an operation vital to many chemical engineering procedures—has resulted in a successful commercial operation for drying grain. The same method can easily be extended to chemical reactions and to removing liquids from other materials.

Another long-term project of considerable industrial potential has concerned the factors responsible for the stability, or the destruction, of suspensions of solids in liquids. Recently, a method has been devised for easily separating almost any suspended solid from the liquid surrounding it. When a mixture of solids is involved, it is often possible to separate single elements. Then, too, the study of chemical reactions at very high temperatures—carried on over the past several years—has resulted recently in the successful preparation of a stable polymer that could not be produced by conventional means.

The eleven sections of the Division are: analytical chemistry, applied catalysis, applied physical chemistry, chemical engineering, colloid chemistry, corrosion, high polymer chemistry, metallurgical chemistry, physical organic chemistry, rubber and textiles. Much of the work falls under the general headings of petroleum or corrosion chemistry, in that several sections work on topics related to one of these fields.

Pure Chemistry.—The Division of Pure Chemistry is organized around a nucleus of outstanding Canadian chemists who direct about 50 young postdoctorate Fellows from all over the world. The work consists of long-term fundamental investigations in physical and organic chemistry.

The work in organic chemistry includes investigation of the structures of alkaloids, studies of the infrared spectra of steroids, the synthesis of porphyrins and of compounds labelled with isotopes. Other sections deal with chemical kinetics and photochemistry, the study of the ionization potentials of free radicals by mass spectrometry, Raman and infrared vibrational spectroscopy, and the application of high resolution proton magnetic resonance techniques to the study of hydrogen bonding and other molecular interactions. Still others study certain aspects of surface chemistry such as the thermal properties of simple solids and imperfections in the bulk and the surface of alkali halide crystals, the heats of micellization by microcalorimetry, and the thermodynamics and stress-strain relationships associated with the absorption of fluids by active carbons. There is also a small group interested in the chemistry of fats and oils, and one engaged in fibre research.

Applied Physics.—The work in Applied Physics is divided between research projects likely to be of practical value and the continual development of the fundamental standards on which measurements generally are based. All the fundamental physical standards for Canada are housed and serviced in this Division, which now has primary standards equal to any in the world in the fields of mass, length, time, electricity, temperature and radiation.

The sections of the Division are: acoustics, electricity and mechanics, heat and solid state physics, instrumental optics, interferometry, photogrammetric research, radiation optics, special problems, and X-rays and nuclear radiations. Industrial problems receive considerable attention, particularly calibration work and industrial noise abatement.

Several of the Division's developments are being produced commercially. Noise-excluding high fidelity earphones developed earlier are finding wide use in high noise areas, as hearing aids in schools for the deaf, and in the field of audiometry. A revolutionary analytical plotter for making maps from aerial photographs will be available in 1962, and new, simplified, deepsea equipment for measuring temperature and depth is ready for sea tests.

Relatively new fields being investigated in the Division include studies on the thermal and electrical properties of ceramics, and on exploding wire plasma motors that might be used to propel rockets in outer space. An accurate and detailed method has been developed for recording the movements and changes of glaciers by means of photogrammetry. The radiation group has begun studies in radio chemistry to be able to measure radio isotopes more effectively. Work continues on the measurement of line standards of length in terms of wavelengths of light, and on the use of atomic or molecular properties to define time intervals.

Pure Physics.—Investigations are under way on cosmic rays, low-temperature and solid-state physics, spectroscopy, X-ray diffraction, and theoretical physics. The work is on fundamental problems that do not have immediate application but advance the frontiers of knowledge and supply the basis for further progress in the applied fields. Energetic particles approaching the earth from space are being studied from three approaches. Continuous recordings of cosmic ray particles reaching ground level are compared with data from some twenty stations around the world. Primary cosmic rays, and their modulation by clouds of particles from the sun, are studied by sounding rockets launched from Fort Churchill. The interaction of energetic particles with matter is investigated chiefly by means of photographic emulsions and Wilson cloud chambers.

The low temperature and solid state group studies the electrical, thermal and mechanical properties of metals, and semi-conductors especially at very low temperatures. In the spectroscopy group, the structures of atoms and molecules are investigated by means of their ultraviolet, visible, infrared and microwave spectra. The theoretical physics group is concerned with theoretical problems in atomic, molecular and nuclear physics.

The X-ray diffraction laboratory undertakes fundamental work in molecular and crystal structure and identification problems for government laboratories. X-ray diffraction methods are extremely valuable for identification purposes as they are non-destructive and require only very small amounts of material. Two of the major projects concern narcotics and vanadium minerals.

Building Research.—Technical improvements in housing are the primary concern of the Division. The research program therefore covers all aspects of housing design, building materials and components, and studies in soil, snow and ice mechanics. Regional stations engaged in research and information are maintained in Halifax, Saskatoon and Vancouver.

Examples of Division projects are the behaviour of cement aggregates and lightweight concretes; the materials and techniques of masonry construction and plastering; atmospheric corrosion of metals; paint and acoustics research; and examination of the performance of walls, windows, chimneys and domestic heating systems. Other studies involve the bearing strength of ice; the fundamental properties of various soil types, including permafrost and muskeg; frost action in soils; avalanche research; and the effects on buildings of ground vibrations caused by blasting or earthquakes. A fire research laboratory provides facilities for all types of fire resistance, fire prevention and fire fighting tests.

As the Division concentrates on building problems peculiar to Canada, much of the work concerns the performance of buildings and building materials in cold weather. In this connection, double-glazed windows and lightweight metal and glass curtain walls, used increasingly in modern buildings, have been examined. Special studies have been made to improve winter building techniques and there is a section devoted to problems of building in Northern Canada. Building on permafrost in the Far North presents a continuing challenge, and the Division assisted recently in the construction of the Kelsey Rapids hydro-electric plant in northern Manitoba.

Many results of the Division's research are expressed in the National Building Code, an advisory document of building standards increasingly used by the provinces and municipalities. The Division also establishes the building regulations for all houses built with National Housing Act assistance.

Mechanical Engineering.—This Division works mainly in the fields of mechanics, hydrodynamics (hydraulic engineering and naval architecture) and thermodynamics. Extensive testing and specification work is undertaken for a variety of industries and for government departments. Much of the work consists of continuing projects related to land, sea and air transportation.

The mechanics activities include mathematical analysis and computation, the development of instruments and servomechanisms, and research on mechanical devices such as gears. One group, working in the field of bio-medical engineering in collaboration with surgeons, has devised a tool for end-to-end joining of blood vessels by a simple stapling operation.

In hydraulics, a number of investigations and models have been made for improving Canadian harbours. As a result of these studies, a new kind of breakwater has been developed which absorbs waves rather than reflects them. Model tests have been successful and means of carrying out full-scale tests are being explored. A promising scheme has also been developed for reducing silt accumulation in harbours by wave energy. The ship laboratory has continued its studies on propeller, rudder and hull design and performance.

Railway work is devoted mainly to locomotives and the riding qualities and mechanical behaviour of freight cars. The improvement of braking systems and the use of cheaper fuels are being investigated. A long-term study is being made of the possible use of gas turbines in locomotives. The application of gas turbines to aircraft taking off and landing vertically is also being explored, together with the thermodynamic, aerodynamic and control problems that this type of aircraft involves. Considerable research is also being done on the behaviour of lubricants at high pressures, and that of gases at extremely high temperatures.

National Aeronautical Establishment.—The National Aeronautical Establishment is designed to meet the aeronautical research needs of military and civil aviation, to co-operate with the Canadian aircraft industry, and to carry out its own research program. Its studies therefore centre around problems of aerodynamics, aircraft structures and materials, and flight mechanics.

Aerodynamics research from low speeds up to a Mach number of about 12 is carried out in the Establishment's wind tunnels. Considerable attention is being given at present to low speed problems of vertical and short take-off aircraft. Other studies include work on the aerodynamic characteristics of high-thrust propellers, on wings with submerged fans, and on wings immersed in powerful slip-streams.

The research on structures and materials involves investigation of aircraft accidents, the fatigue and creep of aircraft structures, the determination of flight loads, aircraft design problems, and non-metallic materials. The latter study is part of a research for low density, high strength non-metallic materials resistant to high temperatures that could be used for structural purposes.

The flight mechanics program covers research on flight safety and flying stability and control; the development of a crash position indicator for locating crashed aircraft; atmospheric physics; anti-submarine magnetometry; and the avoidance of aircraft collisions.

Radio and Electrical Engineering.—The work of this Division includes fundamental research in electrical science, and engineering problems of interest to Canadian industry. The Division co-operates with the Armed Services and associated industries in designing, producing and evaluating new equipment.

Fundamental studies are carried out on radio wave propagation, radio astronomy, upper atmosphere research, and electronic and solid state research. A new radio observatory is being constructed at a site in Algonquin Park, where some equipment and laboratory buildings have already been installed. The Canadian rocket program at Churchill has introduced a new trend in upper atmosphere research, and instruments are being developed to study conditions in auroral displays and meteor showers.

Engineering problems include high-voltage studies, current and potential transformer calibration, the development of electronic medical instruments and operating-room facilities, antennas, electronic aids to navigation, and high-frequency standards. Equipment for calibrating current and potential transformers is being modernized to increase its accuracy and frequency range. An electronic system previously developed to automatically measure and record sweat rates in humans is now being applied in anaesthesia and in other fields where detection and control of moisture content of the air is important.

Among other projects are a microwave system for determining precisely the position of vessels engaged in hydrographic surveying offshore; a 'creative tape recorder' much in demand in electronic music studios; and a highly mobile counter-mortar radar.

Atlantic Regional Laboratory.—The Atlantic Regional Laboratory studies practical and fundamental problems related to the resources and industries of the Atlantic Provinces. In co-operation with industry, a semi-continuous dryer has been constructed for use on Irish moss—a red seaweed of commercial importance. Optimum operating conditions have been established and the quality of extracts from seaweed dried in the apparatus has been tested. The equipment has served as a model for mobile dryers to be used throughout the Atlantic Provinces. The dietary effects of seaweed components are also being investigated. Because carrageenin is used extensively as an additive in foods and drugs, studies are under way to determine any possible harmful effects of the extract. A similar project involves the use of dried, ground seaweeds as components of animal feeds.

The long-term investigation of the basic chemistry involved in the fabrication of steel has continued. Studies have been completed on the rate of oxidation of carbon in molten iron, and on the activity of ferrous oxide in molten slag. Magnesia refractories impervious to molten basic slags have been constructed. At the request of the adhesives industry, a fundamental study has been undertaken into the properties of collagen—a protein in cod skin used as the mother-substance for photoengraving glue.

Prairie Regional Laboratory.—One of the chief aims of the Prairie Regional Laboratory is to develop wider uses for crops grown on the prairies. This is achieved by determining potential uses of crops now in production and by encouraging new crops to meet specific needs. Research is therefore carried out on the properties and reactions of plant components, and on the biological, chemical and engineering processes for turning them into other compounds. The development of oil-seed crops as alternatives to seed crops has received considerable attention.

The Laboratory has studied, for some time, major plant constituents such as carbohydrates, protein, starch, lignin and fibres. An example of this work is the definition of the chemical structure of several polysaccharides found in cereal grains and important in baking, milling and fermentation technology. Attention is being given, also, to minor plant constituents—such as phenals, flavonoids, and terpenes, which are known to have fungicidal and germicidal properties. A plant extractives laboratory has been set up to systematically study extractives from local plants and shrubs.

The engineering and process development group is engaged in research on continuous fermentation processes, pulping processes on wood and straw fibres, and the effects of glyceride structure of fats and oils on the quality of margarines and shortenings. Large-scale processing and pilot-plant-scale operations are carried out. There is also a group, working in the field of mycology, concerned with the production of new chemicals, antibiotics, alkaloids and amino acids.

Administration.—Administration of the foregoing laboratories is organized as a Division of Administration and Awards, which exists only to serve the scientist. The five service units of this Division are: Awards and Committee Services (Awards, Committees, Publications, Research Journals); Administrative Services (General Services, Purchasing, Personnel); Information Services (Technical Information Service, Library, Public Relations Office, and Liaison Offices in Ottawa, Washington, D.C., and London, England); Plant Engineering Services; and Legal and Patent Services. The latter group works closely with Canadian Patents and Development Limited (see p. 108). An expert on economic research acts as special assistant to the Assistant Director, Information Services.

Section 2.—Research in the Atomic Field*

In the past, the atomic energy activities of many countries have been devoted mainly to uranium mining operations in support of military uses. However, a more durable phase is approaching, when a great proportion of the expanding annual construction of new electric power generating plants will employ nuclear energy. This transition is creating a temporary slowing down in the demand for Canadian uranium.

During the next ten years a large part of the relatively small uranium supply for nuclear power will be directed to the supporting inventory of nuclear fuel; beyond that, the make-up to replace consumption is foreseen as rising to match and surpass the current world rate of production. By that time the atomic energy industry as a whole should be supported by the consumers of electric power but at present, in all countries and for a number of years to come, the young industry has the greater part of its costs furnished directly or indirectly through taxation. In an intermediate phase, capital advances made in anticipation of revenues from power consumers will be important.

Three government organizations have the basic responsibilities for atomic energy in Canada: (1) the Atomic Energy Control Board, responsible for all regulatory matters concerning work in the nuclear field; (2) Eldorado Mining and Refining Limited, with a double function as producer of uranium and as the Government's agent for purchase of uranium from private mining companies; and (3) Atomic Energy of Canada Limited, concerned with nuclear research and development, the design and construction of reactors for nuclear power, and the production of radioactive isotopes and associated equipment, such as cobalt-60 Beam Therapy units for the treatment of cancer.

The four principal uranium-producing areas in Canada are at Great Bear Lake, N.W.T. (closed), the east end of Lake Athabasca, Sask., Elliot Lake, Ont., and Bancroft, Ont.; all resulted from reports made by the Geological Survey of Canada. For the greater part, the mining operations themselves are conducted by private companies supported by export contracts that would have terminated in 1962, but have been revised so that some will be stretched out, without increase in total supply, to 1966. Eldorado ran two mines, at Beaverlodge on Lake Athabasca and at Port Radium on Great Bear Lake. However, the latter mine exhausted its ore body during 1960 and closed after 27 years of operation. The revision of the contracts also closed down the less economical mines of private companies. Only two of the original six companies in Beaverlodge were in operation in January 1961 and seven of the original eleven in the Elliot Lake area. A refinery run by Eldorado is located at Port Hope on the northern shore of Lake Ontario. The Research and Development Division of Eldorado, together with the Mines Branch of the Department of Mines and Technical Surveys, also makes important contributions to the solution of recovery problems; a noteworthy example was the development of the sodium carbonate leaching process for the Beaverlodge uranium ore processing plant, which did away with the necessity of shipping of large amounts of acid to that remote area.

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* Prepared by Dr. W. B. Lewis, Vice-President, Research and Development, Atomic Energy of Canada Limited, Chalk River, Ont.

Atomic Energy of Canada Limited (AECL) has an eleven-man Board of Directors, including individuals from private industry, public and private power companies, and the universities. The Company's major plant is near Chalk River, Ont., and its Head Office and Commercial Products Division are in Ottawa. During 1960, contracts were awarded for the construction of AECL's new research centre at Whiteshell, Man., and site development was under way by the end of the year. Early in 1958, a Nuclear Power Plant Division was established in Toronto, with the responsibility of directing the NPD-2 project. This project, a nuclear power demonstration plant to produce 20,000 kw. of electricity, was nearing completion at Rolphton near the Chalk River establishment; its design and construction is being carried out in collaboration with the Canadian General Electric Company Limited and The Hydro Electric Power Commission of Ontario. Also, at the end of 1960, the Nuclear Power Plant Division of AECL, with the assistance of Ontario Hydro, had under way the designing and constructing of a full-scale nuclear power plant, known as CANDU, which will supply 200,000 kw. of electricity to the Ontario Hydro system. By agreement, Ontario Hydro will purchase the plant, situated at Douglas Point near Kincardine on Lake Huron, when it is in satisfactory operation. An Advisory Committee on Atomic Power Development keeps all other utilities fully informed of the progress being made. This Committee, which was set up by the Government in 1954, meets periodically at Chalk River to assess the economic prospects of nuclear power throughout the country.

Because of the great pace of technological development in nuclear power throughout the world, AECL devotes a major effort to collaboration with many organizations. These include industrial firms and the scientific and engineering departments of universities in Canada and, through foreign government agencies and several international organizations, many technical groups in other countries. For example, the Canadian General Electric Company has been contracted to carry out the design and development of an organic-cooled reactor, and it seems likely that this will be the first reactor to be built at the Whiteshell Nuclear Research Establishment. AMF Atomics Canada Limited and CGE are AECL's chief contractors for fuel element fabrication, and other work related to Canada's nuclear power program is carried out in collaboration with Orenda Engines Limited and the Canadian Westinghouse Company Limited. In general, AECL's policy is to stimulate the interest of private industry in the development of nuclear power so that these firms can take over construction of power plants when the time arrives, leaving AECL free for fundamental studies and developing new reactor concepts. AECL also lends general support to the nuclear and related studies of Canadian universities and lets contracts to the universities on specific problems.

In the international field, close ties are kept with the United States Atomic Energy Commission and the United Kingdom Atomic Energy Authority, both of which have representatives permanently at Chalk River. A new agreement with the United States has been signed for co-operative work on heavy-water-moderated reactors; it provides for the free exchange of all technical data in this field and a commitment by the USAEC to spend $5,000,000 in the United States on research and development related to reactors of Canadian design. More or less formal collaboration has also been established with the International Atomic Energy Agency, the Organization for European Economic Co-operation and Euratom, as well as with India, France, Sweden, West Germany, Switzerland, Japan and Pakistan. In India, construction and running-in of the Canada-India reactor was completed during 1960, and the reactor was formally inaugurated in January 1961.

Chalk River Project.—The Chalk River Project is a research and development establishment. Basic and applied research is carried on by about 200 professional scientists and engineers supported by 300 technicians devoted to research in nuclear physics, nuclear chemistry, radiobiology, reactor physics, radiation chemistry, environmental radioactivity, physics of solids and liquids, and other subjects, using as their primary facilities the two major reactors, NRX and NRU, the auxiliary reactors, ZEEP, PTR and ZED-2, the tandem Van de Graaff accelerator and analytical facilities such as a precision beta-ray spectrometer, mass spectrometers, an electron microscope, multi-channel pulse analyzers, automatic recorders, analogue and digital electronic computers. Many of these scientists and engineers are engaged, part- or full-time, on the development of nuclear fuel, on preliminary design and optimization calculations for nuclear power reactors, on solving technical problems encountered in the operation of the reactors, on studies of potential accident conditions in and around reactors such as a burst in a pressurized water-cooling system, on studying disposals of radioactive wastes, on design of instruments for reactor operation such as monitors for traces of normal water in heavy water, for radioactivity in flowing water, and on fail-safe and dependable control systems.

Other groups of engineers, scientists, technicians and tradesmen are engaged in operating and maintaining the reactors, accelerators, chemical plants, heavy-water upgrading plants, workshops, and nitrogen and helium liquefiers. Including the supporting services of finance, catering, library, plant hospital, fire protection, transportation, building maintenance, printing and reproduction and others, the total payroll numbers 2,300. Contractor's men and attached staff add more than 100. Compared with atomic energy establishments elsewhere, the Chalk River plant is of medium size but, for its size, it covers a very broad range of activities.

Heavy-water-moderated research reactors are now becoming numerous and widespread throughout the world, but most of those operating at a high flux of neutrons use enriched uranium fuel (e.g., CP-5 near Chicago in the United States, DIDO and PLUTO at Harwell and DMTR at Dounreay in the United Kingdom, and EL-3 at Saclay in France); however, these enriched uranium reactors do not have as much space available for experiments as do those fuelled with natural uranium and, with the exception of the new Canada-India reactor, NRX and NRU are the only heavy-water-moderated high-flux reactors using this fuel.

The intense beams of neutrons provided by NRX and the still more intense beams from NRU have made possible studies that have attracted scientists from other centres. At the present time (January 1961) a team of Brookhaven (U.S.) and AECL scientists is using an NRU beam with a high-speed chopper and long flight path for neutron nuclear interaction studies; also a team with scientists from Harwell (U.K.) is using another system of choppers on another beam for studying details of the slowing-down action of moderators on neutrons.

In recent years a great technological advance has been based on the properties of nearly perfect crystals with controlled impurities, of which the transistor is the best known example. Studies of the energy changes of very-low-energy neutrons have greatly extended the knowledge of other such processes in solids and liquids where a number of atoms co-operate and an interpretation is possible in terms of quantized elastic waves or phonons. Pioneer work has been done in neutron-phonon interactions using neutron beams from NRX and NRU. Scientists from other countries are also working in this field at Chalk River.

NRX and NRU share with other high-flux reactors, such as the MTR at Arco, Idaho, the ability to produce certain isotopes whose formation requires that two or more neutrons react with the original atom in rapid succession to forestall radioactive decay. In this use they may in a few years be supplanted by still-higher-flux reactors planned in the United States and the U.S.S.R. For chopped neutron beams they may be supplanted by pulsed neutron sources driven by high-current accelerators, but for engineering testing of materials and especially of new types of fuel assemblies, NRX and NRU seem likely to remain unsurpassed. Consideration is being given to raising the flux in NRU. Since 1950, NRX has been used for fuel test irradiations in high-temperature water, and has contributed to the design and operating conditions for fuel in U.S. Naval reactors and the pressurized water reactor at Shippingport. Similar irradiations have recently provided the basis for the design of fuel for the NPD and CANDU reactors.

NRU is the first high-power reactor in which the fuel is regularly changed at full power, a process that confers important advantages in power reactors. NRX is the first high-power solid-fuel reactor to operate without control rods, a feature that promises economies and safety in power reactors. Control is achieved by the level of heavy water maintained against a permanent drain by the speed of return by pumps.

CANADIAN NUCLEAR REACTORS IN OPERATION, UNDER CONSTRUCTION OR APPROVED FOR CONSTRUCTION

Name	Location	Date of Start-up	Power	Fuel	Moderator	Coolant	Use
Zero Energy Experimental Pile (ZEEP)......	Chalk River, Ontario	1945	100 w.	Natural uranium metal or oxide	Heavy water	—	Lattice experiments
National Research Experimental (NRX).....	Chalk River, Ontario	1947	40,000 kw.	Natural uranium metal	Heavy water	Ordinary water	Research and isotope production
National Research Universal (NRU).........	Chalk River, Ontario	1957	200,000 kw.	Natural uranium metal	Heavy water	Heavy water	Research and plutonium and isotope production
Pool Test Reactor (PTR)....................	Chalk River, Ontario	1957	100 w.	Enriched uranium alloy	Ordinary water	Ordinary water	Reactivity and absorption measurements
Toronto University Sub-critical Reactor......	Toronto, Ontario	1958	—	Natural uranium metal	Heavy water	—	Research and teaching
McMaster Nuclear Reactor (MNR)..........	Hamilton, Ontario	1959	1,000 kw.	Enriched uranium metal	Ordinary water	Ordinary water	Research
ZED-2.....................................	Chalk River, Ontario	1960	100 w.	Natural uranium metal or oxide	Heavy water	—	Lattice experiments
Canada-India Reactor (CIR)................	Bombay, India	1960	40,000 kw.	Natural uranium metal	Heavy water	Ordinary water	Research and isotope production
Nuclear Power Demonstration (NPD-2)......	Rolphton, Ontario	1961	20,000 kw. (electricity)	Natural uranium oxide	Heavy water	Heavy water	Power demonstration
Canadian Deuterium-Uranium (CANDU)...	Douglas Point, Ontario	1964-65	200,000 kw. (electricity)	Natural uranium oxide	Heavy water	Heavy water	Power

Nuclear Power Prospect.—The generation of electricity by nuclear power on a competitive economic basis is expected to be established by the type of reactor now being designed by the Nuclear Power Plant Division of AECL at Toronto. This promise rests on the attainment of very low-cost fuelling by an extremely simple system tested over many years by experiments in the NRX reactor. The fuel will be uranium dioxide specially prepared from natural uranium entirely in Canada. A wide range of tests in hot channels in the NRX reactor at heat ratings and energy yields in excess of those required has established that this oxide fuel is incomparably more dependable than the uranium metal fuel for which the NRX and NRU reactors were designed. No provision for reprocessing the irradiated fuel is involved, for, by careful attention in the reactor design to minimizing any waste of neutrons, an energy yield of over 9,000 thermal megawatt-days is expected from a ton of uranium before it is discarded. This results in a prospective fuelling cost of about 1 mill (0.1 cent) per electric kilowatt-hour, to be compared with about 3 mills from coal at $8 per short ton.

Canada has access to such an abundance of coal, oil and natural gas that the competitive cost-level for electric power is lower than in many other countries. Nuclear power plants of the types now under construction in the United Kingdom and the United States have been assessed as unable to reach a low enough cost-level, at least until several successive plants have been built and operated to discover where economies are possible. Plants of the CANDU type do not promise to be significantly cheaper in initial outlay, but the fuelling cost can be so much less that meeting the competitive target is a very real prospect.

The low fuelling cost derives as much from the details of the design proposed as from the general type of reactor chosen. Some of the important features seem worthy of mention. The full-scale plant will generate 220 megawatts with a steam-cycle efficiency of 33.3 p.c., so the reactor has to supply 660 thermal megawatts to the steam-raising plant. The reactor is essentially a tank of heavy water, 20 ft. in diameter and 16.5 ft. long, lying horizontally. It is penetrated by 306 fuel channels parallel to the axis on a 9-inch-square lattice. Each channel is a zirconium-alloy pressure tube of 3.25 in. inside diameter and about 0.16 in. thick. The fuel consists of bundles of 19 rods, 0.6 in. in diameter and 19.5 in. long, made of dense uranium dioxide in thin zirconium-alloy tubes. Heat is taken from the fuel directly by heavy water that passes at 560°F. to the steam boiler, where normal water is raised to saturated steam at 483°F. and 560 psi. The heat developed in the heavy-water moderator that is in the tank outside the fuel channels is not directly used and amounts to about 35 thermal megawatts. The over-all net plant efficiency is then 29.1 p.c. These details show that the design represents a very considerable advance over that originally conceived in 1956, and the improvement bears promise that continued progress will lead to costs well below the economic target. As examples of the advance, it may be noted that for the same electric power output, the reactor power has been brought down from 790 to 700 megawatts and the length of fuel rod from 86 to 30 kilometres. The prospective fuelling cost has dropped from 1.85 mill/kwh. to 1.0 mill/kwh. On the other hand, no over-all reduction has been achieved in the capital cost estimates which remain in the range of $300 to $400 per electrical kilowatt for the whole plant. No reduction is expected until manufacturing experience has been gained that can be used in future construction, but thereafter appreciable reductions should be possible. A detailed breakdown of costs for CANDU was published during 1960.

POWER-COST ESTIMATES FOR CANDU
(mills/kwh.)

Item	*First Unit 200 MW(e)*	*Twin Unit 400 MW(e)*	*2nd Unit Increment 200 MW(e)*
Fixed charges	3.9 to 4.9	3.3 to 4.4	2.7 to 3.8
Fuelling	1.1 " 1.1	1.1 " 1.1	1.1 " 1.1
Operating	1.0 " 1.0	0.7 " 0.7	0.4 " 0.4
TOTALS	6.0 to 7.0	5.1 to 6.2	4.2 to 5.3

These figures will serve to explain why the first plants seem to find economic application in Canada only in the Ontario system, where annual charges on capital are low and coal has to be imported and costs about $8 per short ton. Moreover, the demand for electricity in Ontario is growing at more than 200 megawatts capacity per year. To build reactors for lower powers saves little in cost, so the cost per kilowatt rises and becomes uneconomic. When confidence has been gained from the early plants, higher powers seem likely to be attempted and 400 electrical megawatts from one reactor may be attained.

Operating experience with the NRX and NRU reactors at Chalk River and with the many other types throughout the world has served to emphasize the extreme difficulty and costliness of making even minor operating repairs in the presence of the extremely high levels of radiation that are encountered around reactors. Directly and indirectly, this is responsible for the current hesitation to construct a number of large plants that for economic power cost $40,000,000 or $50,000,000 each. With every new design it is necessary to acquire operating experience before the reliability and availability can be effectively estimated. Experience with defective fuel has been deliberately sought at Chalk River, because this is one of the difficulties most likely to be encountered. Appropriate techniques of locating the defective element, removing it and cleaning up the released radioactive fission products have been established and practised; at the same time fuel designs and ratings have been studied which lead to least difficulty in these operations. Experience of mechanical failures of control rods has lent weight to reactor designs such as NPD-2 where control rods are not needed. Temperature changes are likely to provoke mechanical failures, so design is aimed at keeping the reactor at power for all essential operations including refuelling and complete maintenance testing and readjustment of instruments and working parts of the control system.

These considerations lead to a vicious circle, for the quickest way to achieve reliability is to construct and operate a number of plants following these design principles, but until such plants have operated satisfactorily utilities are unwilling to take the risk of losing time for repairs. The same principles hold throughout the world. For example, the United Kingdom is following a program based on the Calder Hall type of reactor developed, not by a utility company, but by the Government to serve a military requirement. Italy is purchasing three power reactors—one from the United Kingdom, one from the United States based on the Shippingport and Yankee reactors, and one from the United States closely following the Commonwealth Edison Dresden plant. Canada is pioneering another pattern financed by the Government, and working at Chalk River to develop technical knowledge and experience that will give confidence to the utilities. The performance of the demonstration reactor (NPD) will tell whether the sought-for reliability has been achieved so that utilities can finance plants unaided.

Because the CANDU type of reactor is suitable only in large units, AECL is undertaking to study another type of reactor proposed by the Canadian General Electric Company that should have a lower capital cost. This is also a heavy-water-moderated reactor, but the heat is taken from the fuel by an organic liquid specially chosen for a high boiling point and minimum decomposition by radiation. This is a hybrid design that should utilize the Chalk River experience with heavy water and uranium oxide fuel and the experience of the organic liquid developed in the United States as a coolant and moderator for a nuclear reactor. Development of metals that are suitable for use in such a reactor is required and may take a few years to effect.

A third type of power reactor is also under study: again heavy-water-moderated and uranium-oxide-fuelled, but the coolant is normal steam at high pressure. The steam would be superheated in the reactor. New materials are required also for this design and their development may be lengthy. Such a reactor would have a higher efficiency than the CANDU type and would be suitable for large sizes, possibly in combination with an organic liquid coolant.

Section 3.—Space Research in Canada*

Canadian scientific activities in space make no attempt to compete with activities in larger countries like the United States and the Union of Soviet Socialist Republics, but there are important things that can be done better in Northern Canada than elsewhere. Suppose space near the earth's surface is divided into various levels on a technological basis, that is, defining levels to be studied in terms of the vehicles that can be used to carry instruments. Instruments can be carried in aircraft or unmanned balloons up to heights of about 140,000 feet or 27 miles; the lowest practical satellite orbit is about 200 miles. In the interval between, many of the interesting upper atmosphere effects occur, such as the absorption of radio waves which causes communication blackouts. The aurora or northern lights and the lower conducting layers of the ionosphere also occur at these levels. At present, direct measurements in this interesting region of nearby space can be made only by the use of rockets. The rockets that carry instruments into this region need not be the large types used for launching satellites; very effective scientific results can be obtained using rockets of various sizes but having a maximum launching weight of approximately one ton, about 150 lb. of which is scientific instruments. Such a rocket will carry its load of 150 lb. to a height of 180 miles. Such a rocket has been developed in Canada by the Defence Research Board's Canadian Armament Research and Development Establishment.

The objectives of the scientific work are related to the physical and chemical nature of the rarefied gas in the upper atmosphere and the radiations and flux of particles which come in from the sun or outer space. It has become realized during the past few years that the solar atmosphere extends out to the earth's orbit and that there is an interesting region surrounding the earth where the earth's atmosphere merges with that of the sun. There is a flow of energy from the sun, not only in the form of electromagnetic radiation such as visible light, ultraviolet light, etc., but of gas and energetic particles which are often spoken of as the solar wind. This wind consists of clouds of moving gas and includes particles of quite high energy, in fact up to cosmic ray energies. This wind is very turbulent and its intensity varies greatly with observed activity on the surface of the sun. In fact, the intensity of ultraviolet light, X-rays and high energy particles coming from the sun is extremely variable. This is true even though the visible light from the sun is very steady. Radio waves from the sun also show turbulent bursts related to activity on the surface of the sun.

The earth's atmosphere is quite opaque to most of the wide spectrum of radiation and particles coming from the sun. There is a window covering a band of wavelengths represented by visible light and a few more narrow transmission bands in the infrared and at radio wavelengths. When one considers that the sun emits both electromagnetic radiation and particles with energies corresponding to all values from radio waves through the visible, ultraviolet, X-rays and cosmic rays, and only a small fraction of this range of the spectrum penetrates the atmosphere, it is apparent that measuring instruments must be taken outside the atmosphere to learn what is going on in this solar wind. Before the days of rockets and satellites only indirect measurements could be taken, such as by studying the reflection of radio waves from the ionosphere and spectroscopic measurements of the aurora.

The temperature of this solar wind is quite high—high enough that the gas is ionized and, therefore, electrically conducting. The turbulence is, therefore, not like the winds and storms in the lower more dense atmosphere but is subject to electromagnetic forces. The density of the solar wind is lower than the best vacuum that can be achieved in the laboratory and the motion of the particles represents a very high temperature. When this flow of gas moves within reach of the earth's magnetic field, its motion is profoundly influenced by the earth's magnetic field and the earth's magnetic field is, in turn, distorted by the flow of conducting gas from the sun. This flow occurs in bursts and the resulting phenomena at the earth are magnetic storms, radio blackouts, and aurora. The effect on communications is of great commercial importance. There is probably some connection between this turbulence in nearby space and weather, although an understanding of it requires a great deal more research.

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* Prepared (in February 1961) by Dr. D. C. Rose of the National Research Council, Ottawa.

The earth's magnetic field is not symmetrical with the earth's axis. It may be represented approximately by its similarity to the field of a simple magnet near the centre of the earth. The axis of this magnet is tilted with respect to the earth's axis in such a way that the north magnetic pole is in Canadian territory. The region of maximum auroral activity, of almost continuous geomagnetic and ionosphere disturbances, surrounds this magnetic axis and the only place in the world that has readily accessible stations crossing the area of maximum auroral activity is in Northern Canada.

This, of course, has been well known for many years and centres of research on the ionosphere, aurora, geomagnetism and cosmic rays have grown in government laboratories such as the National Research Council, Defence Research Board and Department of Mines and Technical Surveys, and in Canadian universities such as the Institute of Upper Atmosphere Research in the University of Saskatchewan and the cosmic ray group in the University of Alberta, Calgary.

Canada's space objective is to a large extent to take advantage of new techniques in studying the upper atmosphere, particularly in this interesting region between balloon levels and satellite orbits. A certain scientific responsibility also exists because of Canada's geographic location in respect to the north geomagnetic polar regions.

The importance of getting scientific data from northern areas has been realized for many years and with the organization of the International Geophysical Year in 1957-58 the United States built a rocket-launching facility at Fort Churchill, Man., as an IGY project. This has been continued in operation since the IGY and several hundred rockets have been launched carrying scientific instruments far into the upper atmosphere.

Canadian scientists in the Defence Research Board laboratories have built instruments into rockets launched at Churchill. During the IGY and immediately after it, American rockets were used. However, with development of a rocket by the Canadian Armament Research and Development Establishment completed in 1959, Canadian rockets are being launched at the American-operated rocket range at Churchill. The objectives of the Canadian experiments include studies of infrared radiation in the upper atmosphere, the electron density in the lower ionosphere which is largely responsible for radio blackouts, and the measurement of energetic particles including cosmic rays from galactic space and from the sun.

In 1959 the National Research Council formed an Associate Committee on Space Research, the purpose of which is to act in an advisory capacity in co-ordinating Canada's space research activities of a non-defence nature and particularly to make it possible for university research workers, who have interest and experience in upper atmosphere physics, to take advantage of the new rocket techniques. Several university research groups are planning experiments on various problems related to upper atmosphere physics. Their instruments will be launched in rockets during 1961 and a continuing series of investigations is being planned.

Although, because of its geographical position, Canada has a strong interest in nearby space in polar regions, space activities are not confined to that region. The United States has offered to carry experiments planned in other countries in some of their satellites, and Canada was the first country to take advantage of this opportunity. An experiment known as the "Topside Sounder" will be launched in a United States satellite, probably early in 1962. This experiment being carried out by the Defence Research Telecommunications Establishment is a technique of studying the ionosphere by measuring the reflection of radio waves from the topside of the ionosphere or from above rather than from below as is done from the surface of the earth. The same satellite will carry cosmic ray measuring equipment built by the National Research Council's Division of Pure Physics.

In addition, Canada takes an active part in international space scientific activities and holds a membership on the United Nations Committee on the Peaceful Uses of Outer Space. This 24-nation committee will probably be planning a world-wide conference in this field in the near future. The National Research Council also holds a membership in the International Council of Scientific Unions Special Committee on Space Research known as COSPAR. This is a very effective international committee on a purely scientific level where membership is open to the National Academies or National Research Councils of all countries having an active space research program. The present membership consists of representatives from countries on both sides of the iron curtain and from several international scientific unions. It meets once a year and holds interesting symposia on special subjects relating to space science.

Section 4.—Other Scientific and Industrial Research Facilities

Aside from the research facilities and activities covered in Sections 1, 2 and 3, Canadian research is carried on by various federal agencies, provincial organizations, universities and industries. Several provinces in Canada have established provincial Research Councils to stimulate and support research on problems having special provincial significance The universities, of course, form an extremely important part of the Canadian pattern of research. Much of their work is along fundamental lines but practical problems are not neglected, especially those of regional interest.

All three types of institutions—federal, provincial and university organizations—have an interest in problems of industrial significance; this is part of the current Canadian pattern of research. Though many Canadian industries now possess research facilities—some of them quite extensive—the main bulk of industrial research to date has been done under government auspices.

Thus the unique problems of the country, particularly its large area coupled with a small population, have led to a typically Canadian organization of research, of which a very strong associate committee system is perhaps the most distinctive feature.

Subsection 1.—Federal Organizations

Although research by industrial firms has been slow to develop in Canada, government research has expanded rapidly, at first because of the need for speeding up the production of raw materials, which were for many years the basis of Canada's expor trade, and secondly because of the more recent interest in the processing of these raw materials and the necessity of meeting the needs of national defence. Federal agencie involved in research include the Departments of Agriculture, Fisheries, Mines and Technical Surveys, National Defence, National Health and Welfare, Northern Affairs and National Resources, and Trade and Commerce; the National Research Council and othe Crown corporations such as Atomic Energy of Canada Limited. A system of committees with nation-wide representation, eliminates unnecessary duplication of work from thes national research organizations.

The scientific work of the Department of Agriculture is described in Chapter IX o this volume, the work of the Defence Research Board in Chapter XXV, specialized wor in scientific forest research in Chapter X, scientific services concerned with Canada' mineral resources conducted by the Department of Mines and Technical Surveys i Chapter XI, investigational work of the Department of Fisheries in Chapter XIII, researc of the Canadian Wildlife Service of the Department of Northern Affairs and Nationa Resources in Chapter I, the work of the National Research Council at pp. 372-378 an atomic research at pp. 378-383. The activities of the other federal agencies engaged i research are described briefly in the following paragraphs.

Department of National Health and Welfare.—The Department of Nationa Health and Welfare supports both intramural and extramural research programs. Withi the Department, the Food and Drug Directorate, the Laboratory of Hygiene, the Occu pational Health Laboratory and various clinical services are engaged in scientific research in their respective fields. Special studies and surveys are conducted in social and medical economics by the Research Division. The extramural program consists of grants in aid of medical research at universities, hospitals and other research institutions from funds provided under the National Health Program. The Public Health Research Grant provides over $500,000 per annum, with allocations from the Mental Health, General Public Health, Tuberculosis, Cancer, Child and Maternal Health and Crippled Children's Grants making up about $2,000,000 in additional funds. To co-ordinate medical research programs, meetings are held by representatives of the National Research Council, Defence Research Board, Department of Veterans Affairs, National Cancer Institute and the Research Advisory Committee of the Department of National Health and Welfare. These have provided a reasonably clear definition of the field of interest of each organization and have minimized uneconomical overlapping.

Grain Research Laboratory.—Rapid development of grain production in Western Canada led to the passing, in 1912, of the Canada Grain Act. This Act is administered by the Board of Grain Commissioners, which reports to Parliament through the Minister of Agriculture. The Board is responsible for control of the weighing, grading and warehousing of Canadian grain. Soon after its establishment, the Board encountered problems that required scientific study and a Grain Research Laboratory was established at Winnipeg, Man., in 1913.

The Grain Research Laboratory, with a staff of 55, is the main centre of research on the chemistry of Canadian grains. It is well staffed and equipped to provide the service required to help maintain and expand domestic and foreign markets for all types of grain. The Laboratory collects and tests samples of various crops to obtain information on the current quality of all grains shipped during the crop year and prepares, annually, certain information required by the Board for administering the Canada Grain Act. Fundamental research is also undertaken; the program is directed toward increased understanding of what constitutes quality in cereal grains and toward improving the methods of assessing quality.

Subsection 2.—Provincial Organizations

The fact that only a few provincial research organizations exist does not indicate lack of interest in research by the provinces. Most provincial governments have university laboratories to consult, particularly about local industrial and agricultural problems, and many individual departments have facilities for research in their particular fields of endeavour or assist research through the provision of financial aid to students working in those and other scientific fields. Agriculture is particularly well covered because of its importance as an export industry but the provinces are also intensely interested in their other natural resources. Their efforts in the fields of agriculture, forestry, mining and fisheries are outlined in the Chapters dealing with those subjects (see Index).

Nova Scotia Research Foundation.—This body was created by the Government of Nova Scotia in 1946 to give its people additional scientific and technical assistance in finding new and better ways to utilize the resources of the forest, the sea, the farm, the mine and the process industries. To this end it seeks to correlate and further scientific work on local problems and available resources. It assists universities, colleges, research groups, industries, provincial and federal departments and individuals by loans of equipment, grants, scholarships, laboratory and summer assistants, library, cartographic, photogrammetric and translation services, and technical information. It has supported or collaborated in work on breeding new varieties of plants and root nodule bacteria; on antibiotics, poultry, blueberry culture, coal-burning equipment, the constitution and gasification of coal, the non-destructive testing of mine equipment, the utilization of anhydrite, diatomite, fish waste, gypsum, seaweed, slag, slab wood and fertilizing materials. It has conducted geophysical, geological, air pollution, and seaweed surveys as well as forest aphid, forest ecology and genetic studies and has assisted studies on the nutrient cycles of lakes, on X-ray crystallography, and on pressures in underground strata. Its Geophysical Division is equipped to undertake all types of magnetometric, gravimetric, resistivity, seismic and electromagnetic explorations. The Technical Services Division provides free technical information to industries in the province and offers them research and development services and facilities in the fields of physics, chemistry and engineering, including operational engineering. During the summer of 1960, a total staff of 114 persons was engaged on 32 projects.

Saskatchewan Research Council.—The Saskatchewan Research Council was established in 1947 by provincial statute with the principal object of carrying out research in the physical sciences, both pure and applied, which would improve the provincial economy. The Council is therefore particularly concerned with the commercial exploitation of provincial resources and the scientific aspects of business. Besides being actively engaged in its own projects, the Council, by the granting of funds, supports further research at the University of Saskatchewan. Its buildings, occupied by a permanent staff of 40 persons, are situated on the University campus.

Research Council of Alberta.—The Province of Alberta set up a Scientific and Industrial Research Council in 1921, the promotion of mineral development within the province being the chief purpose leading to its establishment. The Council operates under an Act somewhat similar to that which set up the National Research Council and is financed by provincial government appropriations. The present program is directed to the application of basic and applied science toward the development of the natural resources of the province. Investigations in the Council laboratories and pilot plant are organized into two branches—the Earth Sciences Branch which includes all work on groundwater geology, geological surveys and research, and soils, and the Fuels Branch which includes work on coal, petroleum, natural gas, and gasoline and oil testing. There are, in addition, project groups dealing with industrial engineering services, highway research, a co-operative program on cloud physics with reference to the hail problem, and a number of special projects.

The operations of the organization are controlled by a Council of ten individuals representative of the government, the university and industry. The various research projects are under the immediate supervision of advisory committees and the Technical Advisory Committee of the Council; the latter is composed of senior officers of the Council and the government, with certain committee chairmen and university representatives.

The Council laboratories, located beside the University of Alberta campus, include a $750,000 research laboratory and pilot plant provided by the Province of Alberta in 1955.

British Columbia Research Council.—The British Columbia Research Council, under the sponsorship of the provincial Department of Industrial Development, Trade, and Commerce, provides a scientific and engineering staff with laboratories on the campus of the University of British Columbia. The objective is to enable even the smallest firms to improve their competitive position in Canadian and world markets by the use of the most up-to-date scientific and technical knowledge. The Council provides three classes of service: a free information service in collaboration with the National Research Council; assistance to specific firms at cost where information cannot be supplied from existing knowledge; and, at the Council's expense, research on problems of general value to the industrial development of the province.

The Ontario Research Foundation.—The Ontario Research Foundation, established in 1928, is an independent applied-research organization financed initially by an endowment fund composed of subscriptions from manufacturers, corporations, private individuals, and a grant from the provincial government. Most of its current income is derived from contract research and annual provincial government grants. The Foundation carries on research to assist agriculture and industry in developing the natural resources of the province. A study has been made of the physiography and climate of southern

Ontario and also of the parasites found in wildlife in this province. Many investigations have been undertaken in the industrial field and the Foundation is well equipped to work in engineering and metallurgy, physics, textiles, chemistry and biochemistry. The services of the Foundation are at the disposal of industry on a fee basis, and consultative services, testing, short-term studies and long-term investigations have been undertaken for hundreds of firms. The work has resulted in better products and in more efficient processing. The Foundation administers a grant from the provincial government to support postgraduate scholarships and scientific research in the universities of Ontario. It provides an information service for industry, which is supported by the Ontario Department of Planning and Development and the National Research Council.

The Hydro-Electric Power Commission of Ontario.—The Research Division of Ontario Hydro, with a staff of 300, provides services for all technical activities of the utility, in engineering design, construction work, power utilization, and system operation and maintenance. In addition to solving specific problems, the testing, investigation and research work leads to important technical advances, including the development of new and better equipment. Ontario Hydro is thus enabled both to improve the performance of the power system and to effect economies. Members of the staff maintain close contact with research organizations and other power utilities, and participate in the committee work of major technical societies and of standards associations.

Electrical investigations explore methods of generating, transmitting, distributing and utilizing power, and seek improvement in equipment for these purposes. Some of the main fields of study are transmission at extra-high voltage; electrical insulation; system operation and control, and system protection against lightning; communications and telemetering; illumination; and power metering. Attention is given to the performance and efficiency of power equipment, to improved measuring techniques, and to means of minimizing the hazards of electric shock.

Structural and mechanical studies include the following: soil mechanics as related to foundations, roads, and earth dams and dykes; the physical properties of structural components and of numerous items such as conductor joints and line hardware; the mechanical performance and safety features of equipment and various types of machines; metals and metallurgy; welding materials, techniques and applications; atmospheric and underground corrosion of metals; stresses in materials and structures; noise and vibration conditions; and a variety of problems associated with the design, construction and maintenance of concrete structures, the application of masonry materials, and the production, placement and quality control of all concrete used.

In addition to chemical analyses and tests performed on a wide range of materials and products purchased, chemical research work is conducted with regard to such subjects as wood preservation, plastics applications, protective coatings, both vegetation and insect pest control, lubrication, liquid and gaseous electrical insulants, thermal insulation, air pollution, corrosion prevention and water treatment. Other studies contributory and supplementary to the main branches of work are carried on in the fields of physics, biology, petrology, and mathematics. Operations research studies are used in determining optimum policies and procedures in vehicle replacement, inventory control, reserve transformer capacity, economic power dispatch, and schedules for pumped-storage operation.

Subsection 3.—Medical Research*

Support for research in the medical sciences is provided by the federal and provincial governments, by private foundations, by voluntary agencies and by universities and hospitals. These sources assist in establishing research fellowships for training, in providing salaries to established investigators or in the awarding of grants in aid of research in the various disciplines of the medical sciences.

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* Prepared by Dr. J. Auer, Secretary, Medical Research Council, Ottawa.

The Departments of National Health and Welfare and of National Defence maintain well-equipped laboratories in which research is carried out by highly qualified personnel. The Department of Veterans Affairs also encourages its staff to carry out investigations in its own hospitals, mainly in the fields of chronic illness, such as arthritis, atherosclerosis, metabolic and nutritional disorders.

A great variety of medical problems are studied in the medical schools and their affiliated hospitals. In this category, funds from the federal treasury are provided through the Medical Research Council, the Defence Research Board and the Department of National Health and Welfare. The Medical Research Council, established in November 1960 following recommendations by a Special Committee of the Privy Council to review support of extramural medical research by the Government of Canada, is now thoroughly considering its policy for the future. Initially, it is continuing the policies of the former division of medical research of the National Research Council. In principle, it supports the broad field of research in the medical sciences. At present this involves assistance for research in the so-called basic medical sciences such as anatomy, physiology, biochemistry, pharmacology, bacteriology and pathology, as well as in clinical investigation and experimental surgery.

The Defence Research Board awards grants for studies which are related particularly to problems of defence, such as shock, the preservation of blood and the use of blood substitutes, the effects of low temperature, etc. The Department of National Health and Welfare provides funds for research, available on the recommendation of provincial departments of health, in the following fields: public health, tuberculosis control, child and maternal health, mental health, and general public health. It also gives assistance to the Canadian Arthritis and Rheumatism Society (which obtains other support by public subscription) and to the Ontario Heart Foundation (which derives its other resources from the Ontario Government). In addition, the Department makes available to the provinces cancer grants, out of which the provinces may supplement the research funds which the National Cancer Institute receives from the Canadian Cancer Society.

Universities also receive funds for research from provincial branches of the Canadian Cancer Society and from such government foundations as the Ontario Cancer Treatment and Research Foundation and the Alcoholism Research Foundation, from fraternal societies and clubs such as the Rotary Club, from the J. P. Bickell Foundation, the Atkinson Charitable Foundation, the Canadian Life Insurance Officers Association, the Muscular Dystrophy Association of Canada, the Banting Research Foundation, the Multiple Sclerosis Society, pharmaceutical companies, etc. At several universities, individual investigators also receive grants in aid of research from various granting bodies in the United States.

With help from these diverse sources, active research programs are in progress in every one of the twelve Canadian medical schools. In certain of these there are special departments devoted to research; these departments contain graduate students who work toward higher degrees. With few exceptions, departments designed for undergraduate instruction are active in research; a majority provide graduate instruction as well, in which the students are maintained on research fellowships or grants. In many cases, other assistants are employed under grants and thus obtain training in research.

Notable contributions to medical knowledge are made every year by Canadian scientists, but space permits the mention of only a few fields: epilepsy at the Montreal Neurological Institute; functions and interrelations of areas in the brain and brain stem and studies in neurophysiology and neurochemistry at McGill University, the University of Montreal, the University of Ottawa, the University of Western Ontario and Laval University; endocrine and metabolic studies at McGill University and the Universities of Montreal, Toronto, Western Ontario, British Columbia and Manitoba; anticoagulants at the University of Saskatchewan; atherosclerosis and hypertension at McGill and Queen's

Universities and the Universities of Western Ontario, Toronto and British Columbia; hypothermia at the University of Toronto; surgery of heart and blood-vessels at McGill University and the Universities of Toronto and Montreal, and the Montreal Institute of Cardiology; tuberculosis at Dalhousie University, the Institute of Microbiology, Montreal, and the Connaught Medical Research Laboratories, Toronto; mental health at the Nova Scotia Department of Health, the Allan Memorial Institute at McGill University, the University of Toronto, Regina General Hospital and the University of British Columbia; virology, including poliomyelitis, at the Institute of Microbiology, Montreal, the Sick Children's Hospital, Toronto, and the Connaught Medical Research Laboratories; bacteriology, immunity and hypersensitivity at McGill University, the University of Montreal, Queen's University, the University of Western Ontario and the University of Toronto; cancer in all the medical schools. Recently a growing interest is noticeable in problems of radiobiology and in medical research carried out in collaboration with engineers. It should also be noted that medical genetics, particularly with respect to the study of congenital anomalies, is developing rapidly in various centres.

Subsection 4.—University Research

Although there is considerable diversity of purpose in the aims of Canadian universities and colleges, they may be described generally as (1) the diffusion of knowledge through some teaching, extension and evening classes, and written reports; (2) the preservation of knowledge with some reorganization from time to time; and (3) the extension of the boundaries of knowledge essentially through research.

There are, of necessity, differences in emphasis in carrying out these aims. The undergraduate courses are designed to provide broad basic understanding in a variety of subject fields, to be followed by a more extensive and intensive application in one or two of them. Graduate schools provide for a broader and deeper penetration and understanding in one field, supplemented perhaps with more general knowledge in related fields. Seminars, directed study, and individual research usually form a considerable part of advanced study. Most of these courses provide for practice in the research methods of the discipline—whether through experiment, questionnaire, logic or statistics—in order to prepare students capable of adding to present knowledge. This applies to the closely knit professional fields as well as to the more general branches.

For many years research in the universities was directed toward obtaining knowledge for its own sake and was considered pure research. Later it was recognized that the conclusions of such research provided the basic information for applied science and before long the universities, because of their unique position in having trained specialists and equipment, were involved in both basic and applied research. During World War II they were encouraged to undertake emergency and other contractual research and since then the trend toward broadening the field of research, increasing the capacity of universities to educate advanced students, and procuring large-scale costly equipment has shown rapid advance. This has created new problems but has provided even greater opportunities for undertaking sizable projects which could not have been attempted otherwise and has thereby tended to knit the university into the very warp of industry.

Research conducted in the universities falls into three broad categories: projects undertaken by the student under the guidance of a professor or committee to meet requirements for an advanced degree; research undertaken by the professor, which may be of a more or less continuous nature; and larger research projects undertaken co-operatively on a faculty or interfaculty basis in university laboratories or in such specialized institutions connected with the university as medical research laboratories, institutes of microbiology and hygiene, science service laboratories and faculties of agriculture.

Some idea of the increase in research undertaken by Canadian universities may be obtained from a comparison of the situation in 1919 with that in 1959. In the former year, two universities—Toronto and McGill—offered graduate courses beyond the master's degree and graduated 11 students; in 1959 Ontario had four, Quebec three and six other provinces each had one major university offering graduate courses leading to the Ph.D. degree. They conferred 284 doctorates in course, distributed by fields as follows: biological sciences, including medical and agricultural sciences, 64; engineering and applied science, 19; humanities, 61; physical sciences, 101; and social sciences, 39. Subject matter covered in these courses and other research conducted by university professors and reported in professional journals is encyclopaedic and reflects specialization and variety. Outstanding research in particular fields has become associated with various universities, for example: nuclear research and geophysics in McGill, Queen's, McMaster and Saskatchewan; medical research in such institutions as the Connaught Laboratories and the Montreal Neurological Institute; agricultural research in the western universities; and fisheries research in British Columbia.

Outside financial support for university research comes primarily from four sources: agencies and departments of the Federal Government including the National Research Council and Defence Research Board, which provide grants for approved and contracted government-sponsored research; industry, which supports both basic and applied research; private foundations, which provide grants for approved research, sometimes in selected fields; and provincial governments.

Subsection 5.—Industrial Research

Industrial research in Canada is changing very rapidly. In the past, industry in general was largely unaware of the value of research to its own development and to that of the country, partly because many Canadian companies were subsidiaries of companies in the United Kingdom and the United States and partly because small companies found it impossible to finance their own research. The problem was accentuated by the vast size of the country, the absence of concentration of similar industries and the proximity to the relatively large research facilities of the United States.

However, the emergence of Canada as a highly industrialized society, its entrance into multitudinous fields of production, the rapid growth of many large nation-wide industries, the serving of a discriminating domestic market and the meeting of competition from abroad have had the effect of making Canadian manufacturing establishments research conscious and many of the larger ones now possess competent research organizations. The fields covered by some of these industries are outlined in the 1956 Year Book at pp. 386-389. The research work of the Pulp and Paper Research Institute, an independent corporation combining efforts of government, university and industry in the expanding field of pulp and paper research, is described in the Forestry Chapter of this volume.

Industrial Research-Development Expenditures.—In 1958 a survey was conducted by the DBS which attempted to measure the extent of the research program undertaken in the preceding year by industrial firms in Canada and to obtain an indication of its direction. Summary statistics from that survey are given in the 1960 Year Book, pp. 431-433.

A similar survey was taken in 1960 covering research expenditures in 1959, summary results of which will be carried in the 1962 Year Book and detailed statistics in DBS Reference Paper No. 75 entitled *Industrial Research-Development Expenditures, 1959* (catalogue No. 13-516).

Section 5.—Federal Government Expenditures on Scientific Activities

The Federal Government spent a total of $222,600,000 during the year ended Mar. 31, 1959* on all scientific activities, including the conduct of research-development, planning and administering research, capital expenditures on research-development plant, scientific data collection, scientific information and scholarship and fellowship programs. For the year ended Mar. 31, 1960,† such expenditures were estimated to be $212,300,000. The decrease of 4.6 p.c. was mainly accounted for by a decline in development contracts for the Armed Forces; the civilian branches of government (all departments and agencies other than the Department of National Defence‡) actually showed an increase of 16.3 p.c. from $127,000,000 to $147,700,000. With the Defence Research Board included, the increase was 14.1 p.c. from $156,300,000 to $178,300,000.

In the 1958-59 fiscal year, approximately 93 p.c. of the total funds for scientific activities were "departmental or agency funds available as a result of annual estimates", and the remainder was from other sources such as funds received direct from non-federal sources, net transfers of funds within the government, etc. For 1959-60, department or agency funds available as a result of annual estimates were estimated to account for 95 p.c. of the total funds available for scientific activities. However, the amount of such funds was lower in that year by $5,500,000, decreasing to $202,000,000 from $207,500,000 in 1958-59.

Of the total expenditures for scientific activities in 1958-59, $162,300,000 or 72.9 p.c. was for those carried on by personnel directly employed by the departments or agencies concerned; this intramural expenditure increased to an estimated $176,700,000 in 1959-60 when it accounted for 83.2 p.c. of the total. Conversely, funds for scientific activities performed by non-federal employees at outside facilities but financed by the Federal Government were substantially lower in 1959-60, profit organizations receiving $21,100,000 compared with $48,700,000 in 1958-59. On the other hand, more funds were available for educational institutions—$12,100,000 compared with $9,500,000 in 1958-59.

Funds for the physical sciences increased from $45,500,000 in 1958-59 to $55,400,000 in 1959-60, the largest portion of the increase going to the engineering group. Expenditure for the life sciences increased from $35,300,000 to $40,400,000, the most significant relative increase being for the medical sciences.

Capital expenditures on research-development plant for all departments and agencies (including the Defence Research Board but not the Armed Forces) increased from $30,600,000 in 1958-59 to $33,000,000 in 1959-60. Together, Atomic Energy of Canada Limited, the Defence Research Board, the Department of Agriculture, the Department of Mines and Technical Surveys and the National Research Council spent 90.9 p.c. of the total in 1958-59 and 93.5 p.c. in 1959-60. Armed Forces development, being largely in the form of contracts, requires little research-development plant expenditure.

Funds for other scientific activities, i.e., scientific data collection, scientific information, and scholarship and fellowship programs, amounted to $23,500,000 in 1958-59 and an estimated $27,500,000 in 1959-60. In the two years, such expenditures accounted for 10.6 p.c. and 13.0 p.c., respectively, of total funds for all scientific activities.

Excluding the Armed Forces, the Federal Government employed 14,698 persons on the conduct of research-development. Of this total, 3,871 represented professional staff and 10,827 represented supporting staff. Of the professionals, 1,504 had bachelor degrees, 994 had master degrees, and 1,373 had doctorate degrees.

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* Actual—based on expenditures or payments made and accounted for in annual reports for the year ended Mar. 31, 1959.

† Estimates—based on the requirements for the year ended Mar. 31, 1960, tabled in the House of Commons.

‡ Includes the Defence Research Board and the Armed Forces; the former is responsible for scientific activities and the latter for development work, administration of development contracts and the collection of scientific data.

1.—Federal Funds Made Available for Scientific Activities, Years Ended Mar. 31, 1959 and 1960

(Millions of dollars)

Activity	Departments and Agencies, excl. Armed Forces and DRB		Departments and Agencies, excl. Armed Forces but incl. DRB		Totals, All Departments and Agencies	
	1958-59	1959-60	1958-59	1959-60	1958-59	1959-60
Conduct of Research-Development—						
Conduct of research-development including planning and administration	80.8	95.8	104.0	119.6	168.4	151.8
Capital expenditures on research-development plant	25.0	26.7	30.6	33.0	30.7	33.0
Other Scientific Activities—						
Scientific data collection	16.4	18.9	16.4	18.9	18.1	20.6
Scientific information	3.5	4.3	4.0	4.8	4.1	4.9
Scholarship and fellowship programs	1.3	2.0	1.3	2.0	1.3	2.0
Totals, Scientific Activities	**127.0**	**147.7**	**156.3**	**178.3**	**222.6**	**212.3**

2.—Source of Federal Funds Made Available for Scientific Activities, Years Ended Mar. 31, 1959 and 1960

(Millions of dollars)

Source of Funds	Departments and Agencies, excl. Armed Forces and DRB		Totals, All Departments and Agencies	
	1958-59	1959-60	1958-59	1959-60
Funds Available From—				
Departmental or agency funds available as a result of annual estimates	115.7	139.0	207.5	202.0
Cost of indirect support by other units, departments or agencies	8.5	6.7	11.1	9.5
Transfers from other units of the department or agency	—	—	0.9	0.5
Transfers from other departments or agencies	2.9	4.3	3.5	4.3
Funds received directly from non-Federal Government sources	0.6	0.7	0.6	0.7
Other sources	2.4	1.2	2.4	1.2
	130.1	151.9	226.0	218.2
Less—				
Transfers to other units of the department or agency	—	—	0.3	0.3
Transfers to other departments or agencies	0.2	1.0	0.2	2.4
Support provided non-scientific activities	2.9	3.2	2.9	3.2
	3.1	4.2	3.4	5.9
Totals, Funds Available	**127.0**	**147.7**	**222.6**	**212.3**

3.—Federal Expenditures on Research-Development, by Scientific Fields (excl. the Armed Forces and the Defence Research Board), Years Ended Mar. 31, 1959 and 1960

(Millions of dollars)

Scientific Field	1958-59	1959-60
Physical Sciences—		
Engineering—		
Chemical	3.5	4.4
Civil	2.3	2.6
Electrical	4.8	5.9
Mechanical	8.1	9.6
Other (chiefly electronics and aeronautical)	1.7	4.9
Totals, Engineering	20.4	27.4
Other Physical Sciences—		
Chemistry	6.4	7.3
Physics	7.0	8.2
Geology, geophysics and other earth sciences	4.1	4.3
Other Physical Sciences—concluded		
Metallurgy	4.9	5.3
Mathematics	0.1	0.1
Other	2.6	2.8
Totals, Physical Sciences	**45.5**	**55.4**
Life Sciences—		
Medicine	4.5	5.9
Agriculture	23.0	25.4
Biology	7.8	9.1
Totals, Life Sciences	**35.3**	**40.4**
Grand Totals	**80.8**	**95.8**

4.—Federal Government Expenditures on Scientific Activities, by Department or Agency, Years Ended Mar. 31, 1959 and 1960

NOTE.—Detail will not necessarily add to totals because of rounding.

Department or Agency	1958-59					1959-60				
	Scientific Research-Development					Scientific Research-Development				
	Conduct of Research-Development	Capital Expenditures on Research-Development	Total	Other Scientific Activities[1]	Total Funds Applied	Conduct of Research-Development	Capital Expenditures on Research-Development	Total	Other Scientific Activities[1]	Total Funds Applied
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Agriculture	**21,504**	**5,300**	**26,804**	**410**	**27,213**	**23,837**	**6,721**	**30,558**	**512**	**31,069**
Administration Branch	—	—	—	160	160	—	—	—	166	166
Production and Marketing Branch	1,015	—	1,015	—	1,015	1,146	—	1,146	—	1,146
Research Branch	20,488	5,300	25,788	250	26,038	22,691	6,721	29,412	346	29,758
Atomic Energy	**17,800**	**10,141**	**27,941**	**5**	**27,945**	**21,090**	**11,657**	**32,747**	**33**	**32,780**
Atomic Energy Control Board	400	—	400	—	400	540	110	650	—	650
Atomic Energy of Canada Limited	17,400	10,141	27,541	5	27,545	20,550	11,547	32,097	33	32,130
Defence Production	—	**416**	**416**	. .	**416**	**2,750**	**50**	**2,800**	—	**2,800**
External Affairs (NATO Science Fellowships)	—	—	—	. .	—	—	—	—	**42**	**42**
Fisheries (excluding Fisheries Research Board of Canada)	**421**	**121**	**542**	**55**	**597**	**571**	**218**	**789**	**66**	**855**
Conservation and Development Service	34	78	112	—	112	42	107	149	—	149
Industrial Development Service	381	43	424	40	465	525	111	636	63	699
Inspection and Consumer Service	6	—	6	15	21	4	—	4	3	7
Fisheries Research Board of Canada	**4,251**	**1,435**	**5,686**	**25**	**5,711**	**4,831**	**1,053**	**5,884**	**25**	**5,909**
Mines and Technical Surveys	**6,080**	**4,084**	**10,164**	**16,892**	**27,055**	**6,318**	**1,623**	**7,941**	**19,742**	**27,684**
Dominion Observatories Branch	866	509	1,375	140	1,515	303	805	1,108	167	1,275
Geographical Branch	287	3	290	44	334	293	13	306	58	363
Geological Survey of Canada	1,414	3,316	4,730	1,450	6,180	1,659	485	2,144	1,787	3,931
Mines Branch	3,454	253	3,707	36	3,743	3,688	270	3,958	45	4,003
Polar Continental Shelf Project	59	3	62	16	78	376	50	426	528	954
Surveys and Mapping Branch	—	—	—	15,206	15,206	—	—	—	17,157	17,157
National Film Board	**28**	**8**	**36**	—	**36**	**21**	**8**	**29**	—	**29**
National Health and Welfare	**2,751**	**311**	**3,062**	—	**3,062**	**3,842**	**468**	**4,310**	—	**4,310**
National Research Council	**22,208**	**2,683**	**24,891**	**2,269**	**27,160**	**25,161**	**4,604**	**29,765**	**3,059**	**32,824**

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[1] Scientific data collection, scientific information, and scholarship and fellowship programs.

4.—Federal Government Expenditures on Scientific Activities, by Department or Agency, Years Ended Mar. 31, 1959 and 1960—concluded

Department or Agency	1958-59					1959-60				
	Scientific Research-Development					Scientific Research-Development				
	Conduct of Research-Development	Capital Expenditures on Research-Development	Total	Other Scientific Activities[1]	Total Funds Applied	Conduct of Research-Development	Capital Expenditures on Research-Development	Total	Other Scientific Activities[1]	Total Funds Applied
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Northern Affairs and National Resources	**4,671**	**408**	**5,079**	**1,169**	**6,249**	**5,434**	**220**	**5,654**	**1,275**	**6,928**
Northern Co-ordination and Research Centre	6	—	6	16	23	6	—	6	13	20
National Parks Branch	565	15	580	16	595	660	8	668	24	692
Water Resources Branch	1,614	—	1,614	—	1,614	2,095	—	2,095	—	2,095
Forestry Branch	2,398	393	2,791	941	3,732	2,578	212	2,790	1,002	3,793
National Museum of Canada	89	—	89	196	285	93	—	93	236	329
Post Office	**195**	—	**195**	—	**195**	**1,028**	—	**1,028**	—	**1,028**
Trade and Commerce (Board of Grain Commissioners)[2]	**119**	**74**	**193**	**132**	**325**	**140**	**50**	**190**	**133**	**323**
Transport (Air Services)	**200**	**9**	**209**	**257**	**466**	**241**	**59**	**300**	**294**	**593**
Telecommunications Division	7	—	7	257	264	20	—	20	294	314
Meteorological Division	193	9	202	—	202	221	59	280	—	279
Veterans Affairs	**323**	—	**323**	—	**323**	**350**	—	**350**	—	**350**
Central Mortgage and Housing Corporation	**143**	—	**143**	**5**	**148**	**156**	—	**156**	**17**	**173**
The St. Lawrence Seaway Authority	**123**	—	**123**	—	**123**	—	—	—	—	—
Totals, excl. National Defence and DRB	**80,817**	**24,990**	**105,807**	**21,219**	**127,025**	**95,768**	**26,730**	**122,498**	**25,198**	**147,696**
National Defence (excl. Defence Research Board)	**64,340**	**94**	**64,434**	**1,794**	**66,229**	**32,220**	**8**	**32,228**	**1,792**	**34,020**
Defence Research Board	**23,200**	**5,600**	**28,800**	**500**	**29.300**	**23,800**	**6,300**	**30,100**	**500**	**30,600**
Totals, All Departments and Agencies	**168,357**	**30,684**	**199,041**	**23,513**	**222,554**	**151,788**	**33,038**	**184,826**	**27,490**	**212,316**

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[1] Scientific data collection, scientific information, and scholarship and fellowship programs.

[2] Reports to Parliament through the Minister of Agriculture as of Nov. 17, 1960.

5.—Personnel Employed in the Conduct of Federal Research-Development, as at Mar. 31, 1959

Personnel	Departments and Agencies, excl. Armed Forces and DRB				Departments and Agencies, excl. Armed Forces but incl. DRB			
	Level of Training			Total	Level of Training			Total
	Bachelor	Master	Doctorate		Bachelor	Master	Doctorate	
	No.	No.	No.	No.	No.	No.	No.	No.
Professional Personnel—								
Physical Scientists—								
Engineers	415	101	41	557	505	143	55	703
Other physical scientists	336	188	540	1,064	433	273	634	1,340
Life Scientists	425	469	478	1,372	430	492	513	1,435
Others	99	62	135	296	136	86	171	393
Totals, Professional Personnel	**1,275**	**820**	**1,194**	**3,289**	**1,504**	**994**	**1,373**	**3,871**
Supporting Personnel—								
Research-development technicians	...	...	...	2,908	...	...	...	3,680
Skilled craftsmen	...	...	...	1,481	...	...	...	1,587
Other supporting personnel	...	...	...	4,105	...	...	...	5,560
Totals, Supporting Personnel	...	...	...	**8,494**	...	...	...	**10,827**
Grand Totals[1]	...	...	...	**11,783[1]**	...	...	...	**14,698[1]**

[1] In addition, the Armed Forces employed about 2,000 personnel in the conduct of research-development.

CHAPTER IX.—AGRICULTURE

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Agriculture in Canada, though no longer supreme among the primary industries, is of major importance to the economy of the country as a whole and is still basic to many areas. The area of occupied farm land of 271,756 sq. miles (1956) amounts to only 10.7 p.c. of the total area of the provinces and has shown little increase during the past two decades, but cultivation in this static area has become greatly intensified, producing most of the food products required by a rapidly increasing population and providing surpluses of wheat and other grains, wheat flour, livestock, fruits and vegetables and of many prepared and manufactured agricultural products for world markets. The agricultural economy has been undergoing continual change ever since the pioneer farmer first began to produce more than his requirements and to desire products other than those produced on his own land, but that change has now become extremely marked. The evolution in farming practice under the impact of technological and scientific advances, its commercialization and the development of its greater interdependence on other branches of the economy are outlined in a special article entitled "The Revolution in Canadian Agriculture" appearing in the 1960 Year Book at pp. 434-439. Other articles that have appeared in previous Year Books dealing with the historical development of agriculture and with significant features of that progress are listed in Chapter XXVI under the heading "Special Material Published in Former Editions of the Year Book".

Section 1.—Federal Government in Relation to Agriculture*

The federal Department of Agriculture dates from Confederation. It was established in 1867 as an outgrowth of a Bureau of Agriculture set up in 1852 by an Act of the Legislature of the Province of Canada. The Department derives its authority from the British North America Act, 1867, which states in part that "in each province, the legislature may make laws in relation to agriculture in the province" and that "the Parliament of Canada may from time to time make laws in relation to agriculture in all or any of the provinces; and any law of the legislature of a province relative to agriculture, shall have effect in and for the province as long and as far as it is not repugnant to any Act of the Parliament of Canada".

A Department of Agriculture with a Minister of Agriculture at its head was accordingly established as part of the Government of Canada. Departments of Agriculture headed by provincial Ministers of Agriculture were also set up by the provincial governments, except in the Province of Newfoundland where agricultural affairs are dealt with by the Agricultural Division of the Department of Mines and Resources. The agricultural affairs of the Yukon and Northwest Territories are administered for the Federal Government by the Territorial Division, Northern Administration Branch, Department of Northern Affairs and National Resources.

THE NATIONAL AGRICULTURAL PROGRAM

Government agricultural policy in Canada divides itself naturally into two parts. On the national scale it is aimed at the solution of broad problems that affect the country as a whole. Regional policies, applicable to regional problems, are developed in consonance with, and form an integral part of, the national policy. Basic to the concept of national policy is the premise that a stable agriculture is in the interests of the national economy and that farmers as a group are entitled to a fair share of the national income.

In pursuit of these objectives, the Department of Agriculture has carried on, over a long period, a program designed to aid agriculture through the application of scientific research and the encouragement of improved methods of production and marketing. Over the years as conditions have warranted, new programs have been initiated to deal with special situations such as the Prairie Farm Rehabilitation Act to deal with the results of the drought in the 1930's; Prairie Farm Assistance to mitigate the effects of crop failure; and Maritime Marshland Rehabilitation to save valuable soil in the Maritime Provinces. Some of these measures have been adopted into the permanent program of the Department.

While much has been accomplished under this program, changing conditions have dictated the need for a new approach. In the past two decades agriculture has undergone revolutionary changes. Large-scale mechanization, increasing farm size coupled with declining farm numbers, and shrinking world markets have called for a reappraisal of policy, resulting in a number of recent legislative enactments in the agricultural field. These have covered such matters as price stability, credit provision, crop insurance and resource development and are designed to meet the challenge of changing conditions.

The Agricultural Stabilization Act, passed in 1958, established the Agricultural Stabilization Board and provided mandatory price support for a number of farm products, the support level being related to a price formula based on the most recent ten-year average market price for the product concerned. The minimum support level on mandatory commodities is set at 80 p.c. of the average price for the preceding ten years. The Board may support the price of a product in one or more of three ways: by an offer to purchase; by the use of deficiency payments; or by making such payment for the benefit of producers as may be authorized for the purpose of stabilizing the price of an agricultural product.

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*Prepared under the direction of S. C. Barry, Deputy Minister of Agriculture, Ottawa.

The price stabilization program has been useful in assisting the agriculture industry to make production adjustments from a position of excessive supplies to one of more normal relationship between supply and demand. Examples of this are hogs and eggs. The institution of limited deficiency payments by the Stabilization Board assisted in a necessary adjustment of production in a relatively short time. During the period of adjustment the Board guaranteed a minimum average return to producers for a limited quantity of product.

The Stabilization Board has available a revolving fund of $250,000,000. Any losses incurred through the Board's operations are made up by Parliamentary appropriations and any surplus is paid back to the Consolidated Revenue Fund. Assisting the Board in its operations is an Advisory Committee named by the Minister of Agriculture and comprised of farmers or representatives of farm organizations.

The trend toward larger farm units and greater mechanization brought with it a need for higher capitalization on many farms. To assist in meeting this need by liberalizing farm credit provisions, the Farm Credit Act was passed in 1959, establishing the Farm Credit Corporation. This body supersedes the Canadian Farm Loan Board and reports to Parliament through the Minister of Agriculture.

The Farm Credit Corporation is empowered to make long-term loans on the security of first mortgages at favourable interest rates and on more liberal terms than were possible formerly. Maximum values of ordinary loans have been raised from $15,000 to $20,000 and loans may represent 75 p.c. of the appraisal value of the security instead of 65 p.c. as was stipulated under the Farm Loan Board Act. Proceeds of the loans may be used only to acquire farm land, livestock, equipment, seed and fertilizers; to erect farm buildings; to clear, drain, fence, irrigate or otherwise improve the mortgaged land; to discharge liabilities; or for any other purposes which in the judgment of the Corporation may be necessary for the organization and efficient operation of an economic farm unit.

A new feature is provided under the Farm Credit Act—that of supervised loans. These are available only to farmers between the ages of 21 and 45. They can provide capital loans of up to $27,500 and are designed particularly to help young farmers with suitable experience to establish for themselves a profitable farm enterprise. Applicants for supervised loans must satisfy the Corporation that they have had at least five years of experience in farming. They must also agree to operate the farm under supervision of the Corporation according to an approved plan, until the principal of the loan has been reduced to 65 p.c. of the appraised value of the land. Both types of loan bear interest at 5 p.c. and are repayable within a 30-year period. All applicants for loans are required to pay an appraisal fee which will be refunded if no appraisal is made.

Provision for some form of protection against the uncertainties of the weather has long been an objective of Canadian farmers. The Prairie Farm Assistance Act, passed in 1939, affords to western grain growers a measure of relief from the results of total crop failure or disastrously low yields. The Act provides for direct money payments on an acreage-and-yield basis to growers in areas of low crop yield. A levy of 1 p.c. is made on all sales of wheat, oats, barley, rye, flaxseed and rapeseed. This money forms the basis of the fund from which payments are made and any additional sums required are provided from the federal treasury.

Useful as the Act has been, its provisions are limited in scope and are confined to the grain-growing area. To extend the benefits of insurance protection to all crops and regions, the Crop Insurance Act was passed in 1959. This Act does not set up any specific insurance scheme but rather permits the Federal Government to assist the provinces to do so by making direct contributions toward the cost of providing crop insurance. The initiative lies with the province. Schemes may be organized on the basis of specific crops or areas within the province and agreements between provinces and the Federal Government set out the terms of the insurance coverage.

Contributions from the federal treasury are limited to 50 p.c. of the administrative costs incurred by the province and 20 p.c. of the amount of premiums paid within the year. In addition, the Federal Government may make loans to any province equal to 75 p.c. of the amount by which the indemnities required to be paid under policies of insurance exceed the aggregate of: the premium receipts for that year; the reserve for the payment of indemnities; and $200,000. A feature of the Crop Insurance Act is that those who take advantage of an insurance scheme set up under the Act are not eligible for any payments under the Prairie Farm Assistance Act.

Because of its pre-eminence as Canada's most important single crop and leading agricultural export, wheat figures prominently in agricultural policy-making. Under the Canadian Wheat Board Act, all wheat going into commercial channels is marketed through the Wheat Board. Actual selling is done either directly to a buyer for another government or, more commonly, by members of the grain trade acting as agents for the Board.

The prices received by the Wheat Board are determined by competitive conditions in world markets. Payment to producers is made in two stages. An initial payment price is established early in the crop year and this becomes a guaranteed floor price that the grower receives as an interim payment if market conditions warrant it. When the grain is sold a final payment is made, representing the grower's share of any surplus resulting from the sale, less the handling costs. Besides the actual selling, the Wheat Board is responsible for regulating the flow of grain into marketing positions under a quota system. Since supplies exceed the available markets, much of the grain must be stored on farms for varying periods. To offset the hardship that might result, provision is made for the payment of cash advances on farm-stored grain under the Prairie Grain Advance Payments Act proclaimed in 1957.

A further measure of relief for grain growers was provided by means of an acreage payment plan. Under the plan each producer named in a Canadian Wheat Board permit book became eligible to receive a payment of one dollar per cultivated acre listed in his permit book, up to a maximum of 200 acres. Payments were made in 1958 and again in 1960.

For many years, activities connected with the marketing of Canadian grain have been associated with the Department of Trade and Commerce. During 1960, the operations of the Board of Grain Commissioners and the Canadian Wheat Board were transferred to the jurisdiction of the Minister of Agriculture. Thus the grading and marketing of all agricultural products are now unified under the direction of one Minister.

New legislation introduced in 1961 will become an important element in agricultural policy. This is the Agricultural Rehabilitation and Development Act, designed to assist farmers with small or otherwise unprofitable units to add to their incomes through alternative land use or supplementary employment opportunities, and to promote the conservation of soil and water resources. This Act is enabling legislation, authorizing the Government to enter into agreements with provincial governments or agencies for the joint undertaking of: (1) projects for the alternative use of lands classified as marginal or of low productivity; (2) projects for the development of income and employment opportunities for rural agricultural areas; and (3) projects for the development and conservation of soil and water resources of Canada.

Alternative use of land unsuitable for profitable agriculture in Eastern Canada may involve the encouragement of farm woodlots, of tree farming on a more extensive scale or of the development of recreational facilities. In the West, marginal cropping land may be restored to permanent grass through the extension of community pastures. In addition to developing alternative uses for unproductive land, the program envisages the creation of new income opportunities for people in rural areas through the encouragement of local industry and technical training facilities.

The conservation of soil and water resources for agricultural purposes, the third major objective of the legislation, is not new. For years, activities under the Prairie Farm Rehabilitation Act and the Maritime Marshland Rehabilitation Act have been directed toward this end but these were regional undertakings. Under the Agricultural Rehabilitation and Development Act, soil and water conservation as an aid to agriculture will be extended to cover the whole country so that it will be possible for agriculture throughout Canada to enjoy the benefits of resource conservation.

Subsection 1.—Services of the Department of Agriculture

Broadly speaking, the activities of the Department of Agriculture may be grouped under three headings: research, promotional and regulatory services, and assistance programs. Research work is aimed at the solution of practical farm problems through the application of fundamental scientific research to all aspects of soil management and crop and animal production. Promotional and regulatory services are directed toward the prevention or eradication of crop and livestock pests, the inspection and grading of agricultural products and the establishment of sound policies for crop and livestock improvement. Assistance programs cover the sphere of soil and water conservation, price stability, provision of credit, and a degree of crop insurance and income security in the event of crop failure. The Department employs a staff of more than 9,000 persons.

The organization of the Department comprises three branches—Research, Production and Marketing, and Administration. Other activities closely allied with the Department, and responsible to the Minister of Agriculture are those of the Farm Credit Corporation, the Board of Grain Commissioners and the Canadian Wheat Board (see pp. 400-401 and Index).

Research Branch.—The Research Branch is the principal research agency of the Department. It conducts a broad program of scientific investigation covering both basic studies and practical attacks on agricultural problems. There are seven Research Institutes at Ottawa; three Research Institutes, nine Regional Research Stations, six Research Laboratories, 26 Experimental Farms, two Forest Nursery Stations, and 21 Substations are located throughout the ten provinces and the Yukon and Northwest Territories.

The Research Branch serves all principal agricultural areas in Canada and co-ordinates its efforts with those of the National Research Council, universities and kindred agencies. One staff group is charged with the planning and co-ordination of the program and another with the administration required to carry it out. Four directors, representing divisions of animals, crops, soils, entomology and plant pathology, assist the programming of the work. Three research services—statistics, engineering, and analytical chemistry, located with the administrative and executive group at Ottawa—provide research groups across the country with specialized leadership and service and undertake critical researches or other creative work as required.

The Institutes.—The Institutes are organized on a scientific rather than a problem basis and are engaged primarily on basic research of wide application to agriculture. They also carry out related national work such as the identification of plants, insects and pathogens. There are seven Institutes at Ottawa and one each at London, Belleville and Sault Ste. Marie, all in Ontario.

The Animal Research Institute covers the fields of genetics and breeding, nutrition, physiology, biochemistry and management, and tackles problems in the production of milk, beef, lamb, pork, poultry, eggs and fur.

Plant studies are carried out at the Plant Research Institute and the Genetics and Plant Breeding Research Institute in taxonomy, physiology, biochemistry, pathology, agrometeorology, weeds, and fruit and vegetable processing and storage. Cytological and genetic studies on cereal, forage, tobacco and horticultural plants are made by the Genetics and Plant Breeding Research Institute with special reference to problems encountered in the breeding programs and the assessment of quality characteristics.

The Soils Research Institute is engaged in studying genesis and classification, fertility, mineralogy and the organic, physiochemical and physical aspects of soils. This Institute gives leadership to the federal-provincial soil survey program through classification studies and by developing and standardizing analytical methods. It also provides a national soil-mapping service.

A major section of the Entomological Research Institute deals with taxonomy, other assignments being in the fields of genetics, physiology, nematology and apiculture. The Institute assembles and maintains the national collection of insects.

The Microbiological Research Institute is mainly concerned with metabolism, nutrition and genetics of bacteria of agricultural significance.

The Dairy Technology Research Institute investigates problems in sanitary milk production and the processing of dairy products and undertakes projects to improve existing dairy products and to develop new ones.

The Pesticide Research Institute at London examines chemicals used or intended to be used for insect, disease or weed control and investigates the reason for and the nature of the biological activity of the chemical.

The Biological Control Research Institute at Belleville is concerned with efforts to control destructive insect pests and noxious weeds with parasitic and predaceous insects, and with insect disease organisms. It is also the principal importing centre for beneficial insects and for some disease organisms from foreign countries.

The Insect Pathology Research Institute at Sault Ste. Marie is the major importing centre for disease organisms. Insect diseases, including those caused by viruses, fungi, bacteria and protozoa are studied.

The Regional Research Stations and Laboratories cope with primary problems in various regions in all provinces. Other units have undertaken projects assisting in the exploitation of peat bogs, reclamation of marshland for pasture, propagation of shelter-belt trees and prevention of soil erosion, dryland agriculture, the growing of special crops such as tobacco, and livestock breeding.

Production and Marketing Branch.—The Production and Marketing Branch conducts the promotional and regulatory functions of the Department. Its seven Divisions administer legislation and policies in the fields of agricultural production, marketing and control of disease in plants and animals. Three Sections—Consumer, Markets Information, and Transportation, Storage and Retail Inspection—carry on activities in their respective fields.

The Health of Animals Division administers the Animal Contagious Diseases Act and the Meat Inspection Act and also operates animal pathology laboratories. Besides its responsibility in carrying out various disease prevention measures, the Division operates programs for the eradication of bovine tuberculosis and brucellosis and issues health certificates for livestock entering export trade. The animal pathology laboratories, in addition to their research function, manufacture diagnostic reagents and biological products and provide analytical and diagnostic services for diseases of domestic and wild animals. District laboratories across the country give routine diagnostic and research services.

The Livestock Division administers legislation dealing with the grading of meat, wool and fur, with the registration of livestock pedigrees, with performance testing of cattle and hogs and with the supervision of racetrack betting. Other activities include the promotion of livestock improvement and the compilation of market statistics.

The Poultry Division carries out the policies of the national poultry breeding program, including Record of Performance for poultry and hatchery inspection, and administers the regulations for the grading of poultry products.

The Fruit and Vegetable Division administers legislation having to do with the grading of fruits and vegetables in both fresh and processed form, maple products and honey. The Division is responsible for the licensing of interprovincial and international brokers who deal in fresh fruits and vegetables.

The Dairy Products Division is responsible for the administration of legislation covering grades and standards for dairy products, including butter, cheese, concentrated milk products and ice cream.

The Plant Products Division administers Acts and regulations respecting seeds, feedstuffs, fertilizers and pest-control products, conducts field inspection and maintains regional testing laboratories.

The Plant Protection Division is responsible, under the Destructive Insect and Pest Act, for safeguarding against the introduction of serious plant insects or diseases into Canada or their spread in Canada, for certifying freedom from disease and pests in plant exports, and for seed potato certification.

The Markets Information Section is responsible for the compilation and distribution of market information respecting livestock, meats and wool, dairy products, eggs and poultry, and fruits and vegetables.

The Consumer Section helps to promote proper use of Canadian agricultural food products through experimental work, carried on by its home economists, on the cooking of foods and the preserving of perishables.

The Transportation, Storage and Retail Inspection Section administers the payment of subsidies for the construction of public cold storage facilities; cargo inspectors at the main Canadian ports check the handling of goods moving to export; and other inspectors in the principal marketing areas make spot checks on retail outlets to see that food products meet the prescribed standards of quality and grade.

Agricultural Stabilization Board.—The functions and operations of this Board, established in 1958 under the Agricultural Stabilization Act for the purpose of supporting the prices of agricultural products, are described at pp. 399-400.

Agricultural Products Board.—The Agricultural Products Board, first established in 1951 under the Emergency Powers Act, was reappointed under the Agricultural Products Board Act dated Jan. 23, 1952. The Board was established as an auxiliary or facilitating body for the purpose of purchasing, selling or delivering agricultural products pursuant to any agreement or contract made by the Government of Canada as may seem appropriate, as agent for the Agricultural Stabilization Board.

Administration Branch.—In addition to its general responsibility for the business management of the Department, the Administration Branch embraces the Division concerned with Information and Economics. Administration of the rehabilitation and assistance programs is also associated with this Branch.

The Economics Division collects, analyses and interprets economic information required to form and administer departmental policies and programs. It conducts economic surveys and research designed to improve agricultural production, marketing, and farm living conditions. The Division acts as an economic and statistical research agency for the Agricultural Stabilization Board, the Prairie Farm Rehabilitation Administration and other bodies, assisting in any economic undertaking with which the Department is concerned.

The Information Division gathers and publishes information arising from research work and the development and regulatory programs of the Department. It employs all the recognized media—printed publications, press and radio releases, motion pictures and television. In addition, the Division operates the central library of the Department and a system of field libraries located at major research centres of the Department across Canada.

Subsection 2.—Farm Credit and Assistance

The Federal Government has made provision for the extension of credit to farmers under the Farm Credit Act and under the Farm Improvement Loans Act. Cash advances are made to grain producers under the terms of the Prairie Grain Advance Payments Act and certain financial assistance in event of crop failure is provided by the Prairie Farm Assistance Act. These measures are discussed in detail below and, with the exception of the Farm Improvement Loans Act, are also mentioned in the special article on the National Agricultural Program, pp. 399–402. Also discussed in that article are the Crop Insurance Act, and the new Agricultural Rehabilitation and Development Act introduced in 1961 to assist farmers with small or otherwise unprofitable units to add to their incomes.

In addition to the above, legislation has been passed from time to time giving assistance to meet temporary or short-term contingencies, such as the Western Grain Producers Acreage Payment Regulations which, following the drought in 1957, provided for the payment to each grain producer of $1 for each acre seeded in 1958 up to an amount of $200; and the Prairie Grain Loans Act which provided for short-term credit to grain producers of the Prairie Provinces to meet temporary difficulties encountered during the 1959-60 crop year from inability to thresh their grain.

The Farm Credit Act.*—The object of the Farm Credit Act (SC 1959, c. 43, proclaimed Oct. 5, 1959), to be effected by the Farm Credit Corporation, is to assist Canadian farmers in the voluntary reorganization of their industry into economic family farm units, each of which will be of sufficient size to produce the farm income necessary to pay all operating and maintenance costs; to provide an adequate livelihood for the owner-operator and his dependants; and to retire any required credit, with interest, within an appropriate term.

The Act provides two types of long-term mortgage loans. Under Part II of the Act, the Corporation may lend up to 75 p.c. of the appraised value of the farm land taken as security, or $20,000, whichever is the lesser, repayable within a period of up to 30 years. Under Part III of the Act, the Corporation is empowered to make loans of up to 75 p.c. of the value of the farm land and chattels taken as security, or $27,500, whichever is the lesser, to young farmers aged 21 to 44 inclusive and who have at least five years of experience in farming; that portion of the loan secured by farm land is repayable within a period of up to 30 years and that portion (if any) based on chattel security must be repaid within the first ten years. A Part III loan is further secured by mandatory insurance upon the life of the borrower, and his farming operations are subject to supervision by the Corporation until the loan has been reduced to 65 p.c. of the appraised value of the farm land. Similar insurance coverage is available to Part II borrowers on an optional basis. The interest rate on all loans is fixed by the Act at 5 p.c.

The Corporation, in co-operation with the Veterans' Land Act Administration, has established 198 local Federal Farm Credit offices in agricultural communities throughout the country, each served by a resident Farm Credit Adviser. The Credit Advisers are available to advise and assist local farmers in estimating their credit needs, in planning farm operations, and in making constructive loan applications based on the careful appraisal of agricultural productivity, and to provide counsel and supervision to borrowers.

Funds for lending are borrowed at current interest rates from the Minister of Finance. The aggregate amount of such borrowings at any time outstanding may not exceed 25 times the capital of the Corporation, which has been fixed by the Act at $8,000,000.

In the year ended Mar. 31, 1960, the Farm Credit Corporation approved 5,339 loans for a total of $40,031,250 as compared with 4,805 loans for a total of $30,144,950 in the preceding year. At Mar. 31, 1960, the total amount of principal outstanding in loans was $117,233,247 as compared with $89,301,022 the previous year. This amount was secured by 28,453 first mortgages and 505 second mortgages.

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*This Act repealed the Canadian Farm Loan Act, 1927.

1.—Loans Approved and Disbursed under the Canadian Farm Loan Act[1] and the Farm Credit Act, Years Ended Mar. 31, 1951-60

NOTE.—Figures for previous years are given in the corresponding table of former Year Books beginning with the 1940 edition.

Year Ended Mar. 31—	Loans Approved					Loans Paid Out		
	First Mortgage		Second Mortgage		Total Amount	First Mortgage	Second Mortgage	Total Amount
	No.	Amount	No.	Amount				
		$		$	$	$	$	$
1951	1,796	4,312,450	680	409,550	4,722,000	4,288,866	404,213	4,693,079
1952	1,437	3,929,500	494	308,900	4,238,400	4,131,141	337,951	4,469,092
1953	1,685	5,458,750	559	393,550	5,852,300	4,766,149	342,410	5,108,559
1954	2,091	7,366,800	591	449,950	7,816,750	6,606,323	394,216	7,000,539
1955	2,145	7,902,100	395	323,400	8,225,500	7,849,663	357,339	8,207,002
1956	2,057	8,126,900	204	182,750	8,309,650	8,038,877	215,445	8,254,322
1957	2,921	13,978,700	—	—	13,978,700	13,154,066	29,926	13,183,992
1958	3,702	21,278,450	—	—	21,278,450	19,343,560	—	19,343,560
1959	4,805	30,144,950	—	—	30,144,950	28,368,239	26	28,368,265
1960	5,339	40,031,250	—	—	40,031,250	35,840,882	—	35,840,882

[1] Repealed by the Farm Credit Act, proclaimed Oct. 5, 1959.

2.—First Mortgage Loans Approved under the Canadian Farm Loan Act[1] and the Farm Credit Act, by Province, Years Ended Mar. 31, 1958-60

NOTE.—Figures for previous years are given in the corresponding table of former Year Books beginning with the 1940 edition.

Province	1958		1959		1960	
	No.	$	No.	$	No.	$
Prince Edward Island	142	544,200	150	567,800	125	518,950
Nova Scotia	54	290,500	49	219,450	43	260,700
New Brunswick	67	325,150	71	303,650	39	250,350
Quebec	118	667,250	154	891,650	179	1,286,450
Ontario	1,084	7,980,500	1,299	10,702,350	1,384	13,164,750
Manitoba	412	2,133,100	454	2,505,600	251	1,498,750
Saskatchewan	1,122	5,760,900	1,510	8,665,550	1,739	12,582,600
Alberta	590	2,841,500	961	5,125,100	1,421	9,024,800
British Columbia	113	735,350	157	1,163,800	158	1,443,900
Totals	**3,702**	**21,278,450**	**4,805**	**30,144,950**	**5,339**	**40,031,250**

[1] Repealed by the Farm Credit Act, proclaimed Oct. 5, 1959.

The Farm Improvement Loans Act.—The Farm Improvement Loans Act (RSC 1952, c. 110), administered by the Department of Finance, is designed to provide credit by way of loans made by the chartered banks to assist in almost every conceivable purchase or project for the improvement or development of a farm and includes the purchase of agricultural implements, the purchase of livestock, the purchase and installation of agricultural equipment or a farm electric system, the erection or construction of fencing or works for drainage on a farm, and the construction, repair or alteration of farm buildings including the family dwelling. Credit is provided on security related to the purchase or project and on terms suited to the individual borrower.

The legislation, originally operative for three years (1945-48), has been continuous by way of extensions usually for three-year periods. The latest extension was for the period commencing Apr. 1, 1959 and ending June 30, 1962. Under that extension, full-time beekeepers are made eligible for loans and the maximum loan or amount available at any one time to a borrower is increased from $5,000 to $7,500. The maximum term of a loan and the interest rate remain at ten years and 5 p.c. simple interest, respectively.

The borrower is required to provide from 10 p.c. to 40 p.c. of the cost of his purchase or project, depending on the loan category to which it belongs. The Federal Government guarantees each bank against loss sustained by it up to an amount equal to 10 p.c. of loans granted by it in a lending period. This guarantee does not apply to any loan made after the aggregate of all loans made by all banks in a given period reaches an amount fixed by statute. The current maximum stands at $300,000,000. By Dec. 31, 1959, 1,544 claims amounting to $1,025,188 had been paid under the guarantee since the inception of the Act, representing a net loss ratio of less than one-tenth of one per cent after recoveries have been taken into account.

By the end of 1959, $751,615,581 or 82.4 p.c. of the total loans made had been repaid. The position at that time was as follows:—

Period	*Loans Outstanding*	*P.C. of Total Loans Outstanding*
	$	
1945–48	2,770	0.01
1948–51	190,068	0.14
1951–53	868,445	0.5
1953–56	4,569,616	2.1
1956–59	78,872,723	33.0
1959–62 (current period)	75,807,403	90.6
TOTALS	160,311,025	17.6

3.—Loans Made under the Farm Improvement Loans Act, by Purpose and Province, 1958 and 1959, with Cumulative Totals from 1945

Purpose and Province	1958		1959		Cumulative Totals 1945-59	
	Loans	Amount	Loans	Amount	Loans	Amount
	No.	$	No.	$	No.	$
Purpose						
Purchase of agricultural implements	55,818	71,787,652	55,795	76,960,785	676,188	787,122,470
Construction, repair or alterations of, or making additions to any buildings or structure on a farm	5,910	10,004,024	6,192	11,244,869	47,065	65,131,849
Purchase of livestock	6,505	7,041,710	6,699	7,957,750	45,125	41,753,872
Works for the improvement or development of a farm designated in the regulations	1,427	1,090,377	1,698	1,409,851	20,137	13,205,908
Irrigation systems	142	228,372	184	334,407	435	727,398
Purchase and installation of agricultural equipment or a farm electric system and the alteration and improvement of a farm electric system	337	265,317	420	399,267	4,636	3,057,715
Erection or construction of fencing or works for drainage on a farm	139	122,288	155	120,590	1,232	927,404
Totals	**70,278**	**90,539,743**	**71,143**	**98,427,519**	**794,818**	**911,926,616**
Province						
Newfoundland	46	71,756	37	54,711	388	497,667
Prince Edward Island	1,127	1,265,038	888	1,065,603	12,072	11,673,977
Nova Scotia	871	989,452	826	1,046,093	8,952	8,669,646
New Brunswick	783	946,602	684	865,590	7,465	8,241,845
Quebec	12,187	16,442,748	10,344	14,677,615	82,077	99,558,409
Ontario	12,796	17,735,160	12,874	19,109,964	121,673	144,248,120
Manitoba	7,164	8,876,186	7,825	10,425,581	95,861	105,116,905
Saskatchewan	16,077	19,766,505	17,810	23,506,750	228,401	265,712,856
Alberta	17,335	21,793,131	17,851	24,584,293	215,037	242,015,101
British Columbia	1,892	2,653,165	2,004	3,091,319	22,892	26,192,090

Prairie Grain Advance Payments Act.—This Act, which came into force on Nov. 25, 1957, provides for an advance payment to producers for threshed grain (wheat, oats and barley) in storage other than in an elevator and prior to delivery to the Canadian Wheat Board, exclusive of grain deliverable under a unit quota. Advance payments of 50 cents per bu. of wheat, 25 cents per bu. of oats and 35 cents per bu. of barley are made, subject to certain restrictions as to quota and acreage. Maximum advance payment per application is $3,000. At Dec. 31, 1960, the following advance payments had been made:—

Period	*Applications*	*Total Advance*	*Average Advance*
	No.	$	$
Aug. 1, 1957—July 31, 1958	50,412	35,203,467	698
Aug. 1, 1958—July 31, 1959	45,341	34,369,654	758
Aug. 1, 1959—July 31, 1960	50,047	38,492,505	769
Aug. 1, 1960—Dec. 31, 1960	67,677	57,984,073	859

Repayment is effected by deducting 50 p.c. of the initial payment for all grain delivered subsequent to the loan, other than for grain delivered under a unit quota. The amounts deducted are paid to the Board until the producer has discharged his advance. At Dec. 31, 1960, refunds had been made as follows:—

Period	*Total Refunded*	*Total Advance Outstanding*	*Percentage Refunded*
	$	$	
Aug. 1, 1957—July 31, 1958	35,189,079	14,388	99.9
Aug. 1, 1958—July 31, 1959	34,299,832	69,821	99.8
Aug. 1, 1959—July 31, 1960	38,131,615	360,890	99.0
Aug. 1, 1960—Dec. 31, 1960	13,437,179	44,546,894	23.1

Prairie Farm Assistance Act.—The Prairie Farm Assistance Act, passed in 1939, provides for direct money payments by the Federal Government on an acreage-and-yield basis to farmers in areas of low crop yield in the Prairie Provinces and in the Peace River area of British Columbia. Its purpose is to assist in dealing with a relief problem which the provinces and municipalities could not do alone and to enable the farmers to put in a crop the following year. Payments for the 1959 crop as at July 31, 1960 totalled $20,429,463. Total payments made under the Act since 1939 amounted to $248,208,345.

Payments are made from the Prairie Farm Emergency Fund to which farmers contribute 1 p.c. of the value of all sales of wheat, oats, barley, rye, flaxseed and rapeseed. The additional funds required are provided from the federal treasury. The total collected through the 1-p.c. levy in 1959 was $6,326,924. The total amount collected since 1939 was $120,312,114.

The average yield of wheat in a township or block of sections is the basis on which payments are made. If the average yield is eight bushels per acre or less, all farmers within that area receive payments except those on the sections having a yield of 12 or more bushels per acre. The smallest isolated block eligible for payment is one-third of a township (12 sections) provided such block is rectangular in shape. A block as small as one section within an ineligible township is eligible for payment if a side lies along the boundary of an eligible township.

If an area consisting of one-third or more of the cultivated lands in any six or more adjoining sections could not be seeded or summerfallowed because of flooding or other natural causes beyond the control of the farmers, such area is eligible for award at $4 per acre on one-half of the cultivated acreage of each farmer. Only those farmers who make their homes and are ordinarily present in the spring wheat area are eligible for award and no award can be made with respect to more than 200 acres of the cultivated land of a farmer.

There are three categories of payments: (1) if the average yield of wheat for the township or block of sections, excluding those sections having a yield of 12 or more bushels per acre, is more than five and not more than eight bushels per acre, the payment is $2 per acre on one-half of the total cultivated acreage of the farmer; (2) if the average yield of wheat for the township or block of sections, excluding those sections having a yield of 12 or more bushels per acre, is more than three and not more than five bushels per acre, the payment is $3 per acre on one-half of the total cultivated acreage of the farmer; (3) if the average yield of wheat for the township or block of sections, excluding those sections having a yield of 12 or more bushels per acre, is three bushels or less per acre, the payment is $4 per acre on one-half of the total cultivated acreage of the farmer.

In the zero-to-five-bushel categories the minimum payment is $200, although a farm must have at least 25 acres under cultivation other than land that is seeded to grass, or be in the development stage, to qualify for this minimum award.

Subsection 3.—Canada's Relationship with FAO

The Food and Agriculture Organization of the United Nations, at present consisting of 82 member governments, was created for the purpose of promoting national and international action to improve the efficiency of the production, processing, distribution and utilization of all food and agricultural products, with the aim of assisting all countries to raise the levels of nutrition and standards of living of their people. It collects and disseminates information to help its member governments and others who wish it to improve their methods of cultivation, fishing, forestry, marketing, agricultural credit and so on. It is called upon to contribute in many ways to the development and co-ordination of national agricultural programs and policies.

The Conference of the FAO meets every two years and its Council, made up of 25 member nations, meets about twice a year or whenever necessary. The Conference reviews the world situation in food, agriculture, fisheries and forestry as well as the operation of the FAO Secretariat. The Council, meeting more frequently, keeps an eye on price trends and supplies.

The actual day-to-day work of the Organization is carried out by more than 1,500 staff members assigned to Headquarters and the five Regional Offices. Over 50 nationalities are represented on the staff. The Organization has been reorganized during the past two years and is divided into two departments consisting of 10 technical divisions covering the following: Land and Water Development; Plant Production and Protection; Animal Production and Health; Rural Institutions and Services; Forestry and Forest Products; Fisheries; Statistics; Economic Analysis; Commodities; and Nutrition; and one service department which deals with matters related to administration of meetings and protocol and includes divisions covering information, publications, preparation of reports on rural legislation and a library.

There are also over 50 committees consisting of technicians representing member nations who are interested in specific problems. These include: the Committee on Commodity Problems; the International Rice Commission; the FAO Desert Locust Control Committee; the Fisheries Council; FAO Liaison Committee on Fishery Products Technology; European Commission for the Control of Foot-and-Mouth Disease; the Regional Forestry Commissions; etc.

FAO also administers a Technical Assistance Program with about 600 technical assistance experts assigned to field projects in about 70 countries or political subdivisions. New activities have come out of the recently established United Nations Special Fund. By the end of 1960, FAO had been asked to administer a number of major capital projects.

The Organization's current operating resources are $9,225,500 per year. In addition, an amount almost equal to the regular budgetary total is allocated to FAO by the United Nations Technical Assistance Administration and the Special Fund.

Activities.—FAO acts as an instrument of collaboration in the effort to control pests and disease. Throughout the Middle East, international control and prevention measures, co-ordinated by FAO, are aimed at controlling locusts. The European Commission for the Control of Foot-and-Mouth Disease, created in 1952 under FAO auspices, is working toward the complete eradication of the disease. Another field for greater international action is the development of river basins and watersheds affecting several countries. Along with other UN agencies, FAO is studying the land and water development potentialities of the Mekong Valley at the request of the Governments of Viet Nam, Cambodia, Laos, and Thailand. Studies are being made in respect of fishing boats and fish harbours. The items mentioned are only a few illustrations of the scope of the technical activities of the FAO.

The FAO functions as a co-ordinating centre for the collection and dissemination of scientific and technical information in the field of atomic energy and of the possible contribution of atomic energy to the progress of agriculture and related industries. The FAO and the International Atomic Energy Agency have signed an agreement which affords the official basis for co-operation between these two organizations.

The Organization has undertaken a Freedom-from-Hunger Campaign to focus public attention on a world-wide scale upon the continuing problem of hunger and to mobilize national and international effort toward its solution. The Campaign will be a continuing activity up to 1965. The Campaign will consider not only ways of increasing agricultural production and income and of raising buying power for food but also will recognize the need for industrial development so as to increase purchasing power and ability to buy food, especially in the less developed countries. The improvement of nutrition also would cover not only the problem of providing more and better food but the social implications of better nutrition on the position of various groups such as farmers and fishermen.

Commodity Review.—The work of the FAO Conference, the Council and the Committee on Commodity Problems in the commodity field may be summarized as follows: (1) making a periodic review of the commodity situation; (2) providing a forum for discussing problems, exchanging views and studying national policies; (3) sponsoring specialized commodity study groups; (4) reviewing proposals for action and making recommendations; (5) publishing reports on commodity policies and developments; (6) co-operating with other international commodity agencies in the preparation and review of commodity situation reports and in the consideration of proposals for action programs.

A major activity is the study of the problem of commodity surpluses by the Sub-Committee on Surplus Disposal located in Washington, which is concerned with ways and means of using surpluses to establish national food reserves and/or to finance economic development in under-developed countries. Special aspects of the surplus problem are also the concern of other FAO commodity groups, such as the Group on Grains which has undertaken study of the causes of the present imbalance in the wheat and coarse grains situation, and the commodity groups concerned with rice, copra, cocoa, dairy products and citrus fruits.

Canada and the FAO.—Canada's interest in the FAO began with the Hot Springs Conference. The United Nations Interim Commission on Food and Agriculture was established by this Conference and was headed by a Canadian. It laid the groundwork for the first FAO Conference which was held at Quebec City in 1945. In the same year the Canadian Parliament passed the Food and Agriculture Organization of the United Nations Act which provided for the carrying into effect of the "Agreement for a Food and Agriculture Organization of the United Nations between Canada and certain other Nations and Authorities". This Act approves the Constitution of the Food and Agriculture Organization and empowers the Governor in Council to make such appointments, establish such offices, make such Orders in Council, and do such things as appear necessary for carrying out the provisions of the Constitution.

Canada is a member of the Council, the Committee on Commodity Problems (CCP), the Consultative Sub-Committee on Surplus Disposal, the FAO Group on Grains, the Committee on Constitutional and Legal Matters, and the North American Forestry Commission, and is participating in a number of working parties sponsored by the FAO dealing with a variety of problems.

Over 100 Canadians have been on FAO technical assignments since 1951. For some of these experts there were repeat performances. Others have been invited to participate on panels of experts dealing with nutrition, plant protection, forestry, fisheries and atomic energy. A number of Canadians are on the staff at Headquarters in Rome.

Early in 1946, member nations were invited to establish the National FAO Committees to maintain liaison between FAO Headquarters and their respective governments. In accordance with this request, a Canadian Interdepartmental FAO Committee was formed to provide a link between the FAO and the Canadian Government on questions pertaining to FAO. The Committee is composed of senior government officials representing the Departments of Agriculture, Fisheries, Forestry, National Health and Welfare (Nutrition), Trade and Commerce, External Affairs, Finance, and the Dominion Bureau of Statistics.

Section 2.—Provincial Governments in Relation to Agriculture*

Subsection 1.—Agricultural Services

Newfoundland.—Government agricultural services in Newfoundland are operated by the Agricultural Division of the Department of Mines and Resources. The Division is in charge of a Director who is assisted by a staff of 21 officers. For purposes of administration, the province is divided into nine districts. A fieldman with permanent headquarters is located in each district except Labrador, where the officer is resident for the summer only. Officers in charge of different phases of agricultural development visit each district on assignments from the St. John's office.

Departmental policies in support of the agricultural industry include: a bonus of $125 an acre on land cleared by privately owned equipment; the distribution of ground limestone at a subsidized rate; the payment of bonuses on purebred sires; and financial assistance to agricultural societies, marketing organizations and exhibition committees. An inspection service is provided for poultry products, vegetables and blueberries, production of the latter being encouraged by the burning of suitable berry areas and the improvement of roads and trails leading to them. Small fruit development is promoted through the distribution of quality foundation stock.

Every encouragement is given to the production of livestock. An experimental sheep flock is maintained. Poultry and beef production have increased with favourable marketing conditions and with departmental assistance and loans under the Provincial Farm Development Loan Act. A veterinary supervises the health of animals program and the joint federal-provincial project for the eradication of bovine tuberculosis.

The Agricultural Division co-operates with the Department of Education in furthering the 4-H Club movement in the province and accepts responsibility for all projects pertaining to agriculture.

Prince Edward Island.—The activities of the provincial Department of Agriculture are suggested by its staff which includes, in addition to the Minister and Deputy Minister, a Dairy Superintendent and Assistant, two Check Testers, two Dairy Herd Improvement Promoters, a Director of Veterinary Services and nine subsidized practising veterinarians, a Horticulturist, a Soil Analysis Assistant, a Poultry Fieldman, an Economist, two Agronomists, a Director of 4-H Clubs, three Agricultural Representatives, a Nursery Supervisor, and a Director, an Assistant Director and two Extension Workers of Women's Institutes.

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*Information supplied by the agricultural authorities of the various provinces.

Nova Scotia.—The Department of Agriculture and Marketing endeavours to "help the people to help themselves" through strengthening member interest in such organizations as the Nova Scotia Federation of Agriculture, the Nova Scotia Fruit Growers' Association, various agricultural co-operative organizations, credit unions and producer organizations. The Department is assisted by the Nova Scotia Advisory Committee on Agricultural Services which has been established to promote agricultural policies and projects of the federal and the provincial Departments of Agriculture. The Committee meets quarterly to determine how the work of these Departments may be co-ordinated and directed through integrated agricultural policies and with a minimum duplication of services.

New Brunswick.—Provincial government agricultural policy in New Brunswick is directed by the Department of Agriculture. The Department is headed by the Minister of Agriculture who is assisted by a Deputy Minister and the Directors of the following Branches: extension, livestock, dairy, veterinary, poultry, horticulture, field husbandry, potato and plant protection, agricultural engineering, home economics, credit union and co-operative, and agricultural education.

Quebec.—The Department of Agriculture of Quebec comprises 11 services: rural education, rural economy, extension, animal husbandry, horticulture, field husbandry, information and research, home economics, animal health, drainage, and the secretariat. Each service is divided into sections dealing with particular problems.

The Department also includes many other special organizations such as the Research Council, the Dairy Industry Commission, the Dairy School of St. Hyacinthe, the Provincial Extension Farm (Deschambault), the Fur Bearing Animals Extension Farm (St. Louis de Courville). The Farm Credit Bureau, the Quebec Sugar Refinery (St. Hilaire), the Provincial Veterinary School (St. Hyacinthe) and the Office of Rural Electrification are also under the authority of the Minister of Agriculture.

The annual competition for the Agricultural Merit Order, organized in 1890, is held successively in each of five regions. Each contest lasts five years and covers various farm enterprises; its objective is to ascertain the personal merit of the competitors who have most distinguished themselves in the agricultural field and can serve as examples. County Farm Improvement Contests have for 30 years promoted better methods of culture designed to increase farm income and 7,530 competitors have benefited from them.

The Drainage Service deals with soil improvement or land reclamation by renting equipment at very low rates to farmers who wish to improve their crop lands. The Department of Agriculture also gives assistance to such projects in the form of grants. Soil improvement measures include large drainage projects carried out by the Department and smaller projects carried out by groups of farmers with government help. In 1958, 44,209 farmers benefited from help given by this service.

Various forms of assistance are offered toward improvement of crops and livestock. An artificial insemination station operates at St. Hyacinthe for the benefit of breeders' clubs, and plant breeding stations for cereal and forage crops, vegetables and small fruits are maintained in a number of localities. Trained specialists are employed in the work of controlling plant and animal pests and diseases; the main laboratories are situated at Quebec City and field laboratories are located in other districts.

Agricultural co-operation is widespread in Quebec. There are 508 co-operatives with 69,829 members and 89 agricultural societies with 28,452 members to serve local interests and organize county exhibitions. There are also 713 Cercles de Fermières (rural women's clubs) in operation with a membership of 36,903; 425 farmer clubs with a membership of 20,182; and 316 junior farmer clubs in which 8,607 young boys and girls are working on numerous practical agricultural projects.

The Farm Credit Bureau was established in 1936. By December 1958 the Bureau had made 56,660 loans to farmers amounting to a total of $165,427,000; 26,531 of these loans were for the establishment of young men on farms or for farm enlargement.

An Agricultural Research Council was established by the Department in 1957. It is a consultative body composed of professors from the senior agricultural colleges of the province. It has no laboratories but encourages research in all fields of agriculture, by means of subsidies to the faculties of agriculture of the provincial universities, to be carried out under the supervision of the university staffs. The Council also has a scholarship plan to encourage the education of young agricultural scientists. The findings of research projects undertaken under the auspices of the Department of Agriculture are published by the Council in *Recherches agronomiques.*

Ontario.—The Ontario Department of Agriculture provides financial assistance and administrative services through its Head Office, nine Branches, two Experimental Farms, and through research and extension work carried out at the Ontario Agricultural College, the Ontario Veterinary College, Macdonald Institute, Western Ontario Agricultural School, the Kemptville Agricultural School and the Horticultural Experiment Station.

The Department is divided into two main Divisions—the Division of Production and the Division of Marketing. Each is under the direction of an Assistant Deputy Minister, directly responsible to the Deputy Minister. The Division of Production is composed of the Live Stock Branch, Extension Branch, Agricultural and Horticultural Societies Branch, Field Crops Branch, Farm Economics and Statistics Branch, and the Milk Production Program. The Division of Marketing administers the affairs of the Markets Branch, Dairy Branch, Co-operative Loans Board, Milk Industry Board, Farm Products Marketing Board, Ontario Stock Yards Board, Ontario Food Terminal Board, and the Farm Products Inspection Service.

The Live Stock Branch promotes livestock improvement policies with particular attention to the health of animals, gives support to purebred livestock associations, licenses artificial insemination centres, community sales, wool warehousemen and egg grading stations.

Through a staff of Agricultural Representatives, one of whom is located in each county and district, the Extension Branch carries on an educational and extension service, gives leadership to 4-H Club work and to the Ontario Junior Farmers' Association. This Branch also administers policies providing assistance to farmers and settlers in northern Ontario in connection with land clearing and breaking and improvement of farms and livestock. The Home Economics Service, which is part of the Extension Branch, gives leadership to organized activities of rural women.

The Agricultural and Horticultural Societies Branch provides assistance to agricultural and horticultural fairs and exhibitions, ploughing matches and other competitions and administers the Community Centres Act.

The Field Crops Branch assists in the development of good cultural practices, promotes the use of improved strains of seed and works for the improvement of pastures. It also administers the Weed Control Act.

The Farm Economics and Statistics Branch carries on research in farm business including cost analysis, marketing, and land use. In co-operation with the Dominion Bureau of Statistics it gathers and publishes statistics of agricultural production.

The Markets Branch administers the Farm Products Marketing Act; the Farm Products Grades and Sales Act; the Co-operative Loans Act; the Grain Elevator Storage Act; and the Farm Products Containers Act.

The Dairy Branch provides an inspection, instruction and supervision service to all dairy factories and promotes the production of clean milk on farms. The Milk Industry Board of Ontario, functioning under the authority of the Milk Industry Act, regulates and supervises the marketing of milk and cream.

The Information Branch prepares and distributes—through press, radio, television and publications—information of value to producers and consumers of Ontario's farm products.

The Ontario Agricultural College, including Macdonald Institute and the Ontario Veterinary College, all located at Guelph, provides research and extension services to Ontario agriculture, as do the Horticultural Experiment Station at Vineland, the Western Ontario Agricultural School and Experimental Farm at Ridgetown, and the Kemptville Agricultural School at Kemptville. Demonstration Farms in northern Ontario, one at New Liskeard and another at Sault Ste. Marie, are operated for the demonstration of methods adaptable to the area concerned, present emphasis being on beef cattle production. Supervision of the schools and colleges, experimental farms, and the Ontario Telephone Authority is the direct responsibility of the Deputy Minister of the Department.

Manitoba.—The Department of Agriculture and Conservation serves Manitoba through the following branches: agricultural extension; livestock; dairy; soils, crops and weeds administration; agricultural publications, statistics and radio and information service; co-operative services; the provincial veterinary laboratory; and water control and conservation.

The Extension Service deals with agricultural economics, horticulture, poultry, agricultural engineering, beekeeping, 4-H Clubs and women's work, and has specialists devoting attention to these subjects. Meetings, field days and short courses are held. Thirty-five agricultural representatives are located throughout the province, each serving from one to five municipalities; 12 home economists serve designated areas.

The Live Stock Branch administers the Animal Husbandry Act, develops and administers policies that encourage the improvement and production of livestock, and works in close co-operation with the Veterinary Laboratory Service and the federal Health of Animals Division in the control of livestock diseases.

The Dairy Branch administers the Dairy Act, supervises the grading of cream, inspects creameries and cheese factories, gives instruction in cheese and butter making, issues licences to makers of dairy products and to cream graders and conducts a dairy-cost study among milk producers. Extension activities include addressing meetings and preparing articles and leaflets on dairy farm problems.

The Soils and Crops Branch deals with grain and forage crops, conservation and fertility and provides liaison between the Government of Manitoba and the Government of Canada in regard to PFRA projects. The Branch develops and administers policies that encourage good field crop husbandry and conservation practices. The Weeds Section directs the activities of 18 municipal weed control units comprising 70 rural municipalities engaged in eradicating deep-rooted, persistent, perennial weeds; supervising weed demonstrations; investigating weed problems; conducting weed surveys; and preparing weed literature, mounted weed specimens, etc.

The Agricultural Publications and Statistics Branch publishes and distributes annually approximately 100,000 bulletins, circulars, posters, leaflets, etc. It provides the public with agricultural statistics relating to Manitoba agriculture, and maintains an information service which uses the media of the press, radio and TV.

The Co-operative Services Branch takes care of the registration and supervision of co-operatives and credit unions and the administration of the Acts governing them. The Branch also collects and compiles statistics on co-operative activity throughout the province.

The Veterinary Laboratory operates a diagnostic laboratory for animal diseases, the services of which are available to veterinarians and livestock owners.

The Water Control and Conservation Branch administers, through the Water Rights and the Water Power Acts, the water resources of the province and all works in connection with the control and utilization of those resources. Through the Departmental Act and other associated statutes, provision is made for the construction of works to control and use water, and to provide technical and financial assistance to junior levels of government for construction, maintenance, and operation of such works.

Saskatchewan.—The Saskatchewan Department of Agriculture is organized in the following branches and services.

The Administration Branch handles general staff records and accounts. Data on crop conditions, production, marketings and income are collected and farm information dispensed daily over seven private radio stations.

The Agricultural Representative Service has a technical staff of 58, comprising a director, an assistant director, 40 agricultural representatives, six assistant agricultural representatives, four area supervisors, five farm management specialists and one audio-visual aids supervisor. This extension field staff serves all branches of the Department as well as the other agencies operating within the Co-operative Agricultural Extension Program. Agricultural representatives are active in all federal, provincial and university farm services; they work through Agricultural Conservation and Improvement Committees in each rural municipality and local improvement district to supply the farmer with scientific and practical information. Committees study local farm problems and initiate improvement programs. District Boards, with representatives from each municipality, assist the agricultural representative in planning and developing a district agricultural improvement program. Through an Earned Assistance Program, the Department pays one-half the cost of local group development projects. In farm labour matters, co-operation is maintained with the federal Department of Labour and the National Employment Service in directing annual movements of farm labour in and out of the province.

The Animal Industry Branch has four divisions: the Dairy Division administers dairy herd improvement programs, assists producers with management and production problems, inspects and licenses dairy manufacturing and frozen-food locker plants, and administers dairy, locker plant and margarine legislation; the Livestock Division encourages the use of suitable animals for breeding purposes by the establishment of purebred sire areas and by assistance in the purchase and distribution of stallions, bulls, boars and rams, and registers brands, licenses livestock dealers and agents and promotes programs on insect control, feeding and management; the Poultry Division maintains poultry and turkey testing and banding services under Saskatchewan Hatchery Supply Flock Policies, licenses produce dealers and poultry buyers, hatcheries and hatchery agents, assists with poultry shows and field days, and otherwise promotes flock improvement; the Veterinary Division assists students in veterinary science under a scholarship plan, administers the Veterinary Service District Act, disease testing and vaccination programs, and co-operates with Federal Government officials and local veterinarians in disease prevention and control.

The Conservation and Development Branch provides engineering services for irrigation development, usually in co-operation with the Federal Government, and for drainage programs and projects. Reclamation of land by drainage, development of misused land and under-utilized land, and construction of provincial community pastures all come within its jurisdiction. The Branch provides engineering assistance to conservation and development areas, water users' districts, and irrigation districts in connection with water control projects.

The Lands Branch administers Crown, school and Land Utilization Board lands, except forest reserves and parks in the settled area of the province; classifies it according to the use for which it is best suited; disposes of such lands under long-term leases; secures land control for land utilization projects; supervises new settlement projects; pays for clearing and breaking by farmers on provincial leases; and operates provincial community pastures.

The Plant Industry Branch organizes and administers programs for crop improvement and crop protection, and advises on seed and crop improvement, soil conservation, horticultural problems, and weed and pest control. The improvement of grassland is promoted through a forage crop program. The Seed Plant Division carries on custom cleaning of forage seeds and registered cereals. The Apiary Division advises on beekeeping and honey production and carries on continuous inspection.

The Agricultural Machinery Administration conducts a testing service, publishes reports on farm machinery, and licenses dealers in farm machinery.

The Family Farm Improvement Branch, newly established, assists farmers by providing technical services and financial assistance with farmstead development. The Branch specializes in such farmstead problems as buildings, water and sewage works, household problems, vegetation used in the farmyard, and materials handling. The Farm Water and Sewage Program is the first major program to be undertaken by the Branch.

Alberta.—The Alberta Department of Agriculture is organized in the following branches and services.

The Field Crops Branch administers programs and policies relating to crop improvement, soil conservation and weed control, crop protection and pest control, horticulture and apiculture. Agricultural Service Boards have been organized in municipal districts to assist with agricultural programs, and the Department of Agriculture is represented on each Board.

The Live Stock Branch aids in maintaining the quality of herds and flocks by assisting farmers in securing purebred herd sires and assists artificial breeding associations in the breeding of dairy cattle. The Branch also supervises livestock feeder associations and administers legislation relating to stock inspection, brands, domestic animals and the sale of horned cattle.

The Dairy Branch administers the Dairymen's Act and the Frozen Food Locker Act. Grading and purchasing of raw produce by all dairy plants are under regulation, as are standards of construction, manufacture, processing, sanitation, and temperature control for dairies and frozen-food lockers. A regular cow-testing service is available to dairy producers and the Branch laboratory conducts chemical and bacteriological analyses needed for industrial directives. Yearly cost studies and dairy farm management services are in operation in the principal milk-producing areas.

The Poultry Branch carries on programs for the improvement of poultry husbandry and supervises flock approval for the control of pullorum disease. The Branch issues hatchery, wholesale, first receiver and trucker licences for the handling of poultry products.

The Veterinary Services Branch provides scientific diagnoses of livestock and poultry diseases through its laboratory; conducts investigations of disease conditions; lectures in veterinary science at the University of Alberta, Schools of Agriculture, and many meetings; and promotes government policies aimed at reducing losses throughout the province.

The Agricultural Extension Service operates 43 offices and employs the services of 56 district agriculturists and 21 district home economists. The district agriculturists assist farmers with their problems and advance departmental policies designed to improve the standard of agricultural practices. The district home economists provide a similar service for farm women. Bulletins are prepared dealing with agricultural and home economics topics. The Branch is responsible for the supervision of agricultural societies and, in co-operation with the federal Department of Labour, is concerned with recruitment and placement of farm labour.

The Fur Farms Branch administers the licensing and exporting of live animals and pelts, and assists fur farmers in care, management and stock improvement; the Radio and Information Branch conducts five broadcasts a week over seven radio stations and issues weekly bulletins to press and radio; the Water Resources Branch deals with water rights, drainage, irrigation, and water power development; the Land and Forests Utilization

Committee (composed of representatives from the Department of Lands and Forests, Power Commission, Department of Municipal Affairs, University of Alberta and Department of Agriculture) deals with the proper use of submarginal agricultural land; and the Farm Economics Branch, formed Jan. 1, 1961, studies various economic farm problems and advises farmers on management techniques.

Credit is made available to young farmers for the purchase of farm lands under the Farm Purchase Credit Act and the Farm Home Improvement Act. Schools of Agriculture and Home Economics are operated at Olds and Vermilion (see p. 419).

British Columbia.—The Department of Agriculture has four main branches. The Administrative Branch is responsible for the general direction of agricultural policies, the administration of legislation affecting agriculture and the compilation of reports and publications. This Branch also maintains direct supervision of the Field Crops, Soil Survey, Plant Pathology, Entomology, Apiary, Markets and Statistics, Farmers' Institutes and Women's Institutes Branches.

The Livestock Branch engages in the promotion and supervision of the livestock industry and provides veterinary services affecting disease control regulations; its work also includes supervision of stock brands, inspection of dairy and fur farm premises, and inspection of beef grading. In addition, the Branch supervises the operations of the Dairy Branch in the inspection of commercial dairy premises. Officials are stationed at 11 centres throughout the province.

The Horticulture Branch supervises fruit, vegetable and seed production, and provides advice on plant diseases and insect pest control. The Branch maintains field offices at 10 points in the southerly section of the province.

The Agricultural Development and Extension Branch offers general information services to farmers through 19 offices which cover all major farming districts. In addition, this Branch provides agricultural engineering service, supervision of the government land-clearing program, and farm labour services and promotes junior club projects. The Poultry Branch offers extension services to the poultry industry.

Subsection 2.—Agricultural Colleges and Schools

All provinces provide facilities or assistance for training in agricultural science at university level. The colleges and schools are administered by either the Department of Agriculture or the Department of Education of the respective province.

Newfoundland.—There are no agricultural colleges in the province but the Agriculture Division of the Department of Mines and Resources provides a number of scholarships annually for young men to attend agricultural colleges in other provinces.

Prince Edward Island.—A two-year course in scientific agriculture offered at Prince of Wales College, Charlottetown, prepares students for third year at Macdonald College, Que. In the Vocational School, short courses provide knowledge and skill in agricultural pursuits and develop in the student a sense of the dignity and importance of agriculture as a calling and an understanding of the value of the industry to the province.

Nova Scotia.—The Nova Scotia Agricultural College at Truro offers two courses: the first two years of a degree course in agriculture; and a two-year course in vocational agriculture. The College assists in conducting short courses at various provincial centres, supports Folk Schools and gives direction to 4-H Club organizations. Tuition is free for Canadian students.

New Brunswick.—The four agricultural schools of New Brunswick are located at Woodstock, Fredericton, St. Joseph and St. Basile. Two-term agricultural courses extending over five months each year are offered at Fredericton, St. Joseph and St. Basile and a three-year course is conducted at Woodstock. The curriculum includes training in all phases of agriculture, shop and general academic work. Ten-month home economics courses are also offered at Woodstock and St. Joseph.

Quebec.—Four-year university courses leading to a degree of Bachelor of Science in Agriculture are available through Laval Faculty of Agriculture (Ste. Anne de la Pocatière), l'Institut Agricole d'Oka (affiliated with the University of Montreal), and McGill Faculty of Agriculture (Macdonald College). The Provincial Veterinary School at St. Hyacinthe (affiliated with the University of Montreal) offers a four-year course leading to a doctorate in veterinary medicine. There are also 16 secondary agricultural schools throughout the province, and five orphanages offer courses in agriculture. About 1,500 students, the great majority of whom are sons of farmers, attend these intermediate or regional schools of agriculture and 230 pupils follow practical agricultural courses in the orphanages. A farm is always annexed to the school for practical training and specialists give instruction on the maple-sugar industry, farm mechanics, co-operatives, plant protection, veterinary hygiene, aviculture, marketing and silviculture. School co-operatives and clubs are organized and directed by the pupils under supervision. Household science training for the daughters of farmers and settlers is given in nine of these schools.

Ontario.—A two-year course at the Ontario Agricultural College (for the Associate Diploma in Agriculture) provides basic training for young persons interested in making agriculture their vocation. Study includes the application of science to agricultural practice and training for rural citizenship. A four-year course at the same institution for the degree of Bachelor of Science in Agriculture gives fundamental education in the science of agriculture. Sound training is provided for farming as a profession, for entrance into all agricultural services, industry and teaching, and for those who wish to proceed to graduate studies for master's and doctorate degrees. Graduate courses are offered leading to the degree of Master of Science in Agriculture. Graduate students are enrolled in a department or departments of the Ontario Agricultural College conjointly with a department or departments of the University of Toronto for advanced courses of study and training in experimentation and scientific investigation. M.S.A. graduates may go into teaching, research or postgraduate study.

Macdonald Institute offers two main courses in home economics for young women. The one-year course of practical training in the art and science of homemaking earns a diploma of merit but gives no professional standing. The four-year professional course leads to a Bachelor of Household Science degree granted by the University of Toronto. University matriculation standing (nine papers of grade 13) is necessary to enter the four-year course. At its completion, Food Administration Option graduates are eligible to work in the professional dietetic and food-service fields. These graduates and those of the Clothing and Textiles Option and the Home Management Option are finding increasing employment in many areas, notably in the education, extension, business and research fields.

The Ontario Veterinary College offers a five-year course leading to the degree of Doctor of Veterinary Medicine. In addition to its function as a teaching institution, the College is a research centre for animal diseases and provides free consultation services for veterinary surgeons in practice as well as extension services in the interests of the livestock industry.

The Kemptville Agricultural School offers: a diploma course in agriculture comprised of two six-month terms, giving practical training in modern farming methods and community leadership, and designed primarily for young people who wish to farm but serving also as a preparation for many other occupations closely connected with agriculture; a six-month advanced course in agricultural mechanics for diploma graduates in agriculture; a six-month homemaker course leading to a diploma in homemaking and qualification for positions in fields of home economics; a diploma course comprised of two six-month terms for girls wishing to prepare for positions in the food services, sewing centres, tourist trade and other fields of home economics. In addition, a three-month course is given for dairy apprentices, leading to the Dairy School Diploma required for certified buttermakers, cheesemakers and operators of dairy manufacturing plants. A 450-acre farm and residence life are features of the Kemptville Agricultural School.

The Western Ontario Agricultural School at Ridgetown offers a two-year diploma course (October to April), which gives practical training in modern farming methods and prepares young men to serve agriculture in allied occupations. The facilities comprise a group of modern buildings, including a residence and dining hall, modern classrooms, laboratories, and athletic facilities. There is a 425-acre farm with up-to-date equipment, much of which is used for student activity and for practical demonstrations. A full complement of livestock is maintained on this farm for carrying out the school program.

Manitoba.—The Faculty of Agriculture and Home Economics of the University of Manitoba offers degree courses in agriculture and home economics as well as a two-year, sub-collegiate diploma course in agriculture. Practical short courses in agriculture and homemaking are also given at the Agricultural Extension Centre at Brandon.

Saskatchewan.—The University of Saskatchewan offers a degree course in agriculture designed to meet the needs of those who intend to teach agriculture in secondary schools or colleges, to engage in research extension or administrative work, or to farm. Specialization is possible with permission of the faculty. Provision is made for combined courses in agriculture and arts or commerce. Postgraduate courses are available.

The Saskatchewan School of Agriculture offers a practical course intended to give sound training in farm practice and also to train young men in rural leadership.

All courses leading to a degree in home economics require four years. The prescribed course of studies for the first two years is the same for all pupils but in the third and fourth years four types are offered: (1) for teachers, (2) for dietitians, (3) general, and (4) additional specializations. A combined course leading to a degree in arts and science and home economics requires at least five years.

Alberta.—The University of Alberta offers a four-year degree course in agriculture to students with senior matriculation or its equivalent. Students may elect a general program or major in a wide range of special courses in the fields of animal science, economics, entomology, dairying, plant science, and soils. Graduate work at the master level is offered in all departments and at the doctorate level in some.

The Alberta Schools of Agriculture and Home Economics, located at Olds and Vermilion, offer practical courses in agriculture and homemaking. The purpose of the schools is to train young men for farming and young women for homemaking. Students must have grade 9 standing for entrance into the regular two-term course. A one-year course is offered to those who have 70 or more high school credits. Living accommodation is provided as well as auditorium and gymnasium facilities.

During the summer months the schools are used for agricultural meetings and conferences of organizations that are connected with agriculture. During the month of July, leadership courses, 4-H Club gatherings, farm camps and other events keep the facilities in constant operation.

British Columbia.—The Faculty of Agriculture at the University of British Columbia offers a four-year general degree course in agriculture and a five-year honours course. In the honours course there are 15 fields in which a student may specialize. Work is also offered by the Faculty of Agriculture in the Faculty of Graduate Studies through which a student may proceed to the degrees of Master of Science in Agriculture and Master of Science; in a limited number of fields, work is offered at the doctorate level. The Faculty also offers a one-year or two-year diploma course in occupational agriculture, adaptable to the needs of individual students.

In co-operation with various branches of the provincial Department of Agriculture and under the auspices of the University Extension Department, the Faculty of Agriculture also offers a number of short courses which vary in length from one or two days to several weeks.

Section 3.—Land and Water Conservation*

Subsection 1.—Federal Projects

Twenty-five years have passed since the inception of the Prairie Farm Rehabilitation program in 1935 to deal with the immediate problems of drought and soil drifting which were then having a severe effect on agriculture on the Canadian prairies. Since that time many policies and projects have been undertaken, varying widely in nature and scope, but basically they have all had one objective—better land utilization and more efficient use of available water resources as a means of providing greater security and stability to prairie agriculture.

In this connection, much progress has been made and much valuable knowledge and experience has been gained on which to base long-range land and water conservation planning in Western Canada. This work has involved the introduction of those systems of farming, land use, and water supply that would provide greater economic security for the agricultural population on the prairies and, more recently, the development of larger and more comprehensive land utilization and water development schemes that will serve entire agricultural districts and prairie communities.

Cultural improvements have led to an almost completely new approach to the economics and practice of dryland farming. Techniques in soil management and methods of making more efficient use of limited supplies of available soil moisture have been developed and are in common use, helping materially to minimize the drought problem in drier areas. The development of assured farm water supplies throughout the drought region for domestic, stockwatering and irrigation purposes has also contributed greatly to a more stable agriculture over a wide area. In particular, the development of assured feed supplies through irrigation for the winter feeding of livestock and the provision of reserves of feed to carry livestock over periodic dry periods has given much greater stability to the livestock industry and has been a major factor in encouraging agricultural diversification in the plains region.

Finally, the permanent removal from cultivation of lands that have proven submarginal for cereal crop production, the fencing, regrassing and other improvement of such areas for community pasture purposes, and the resettlement and rehabilitation of farmers operating such lands, principally to irrigation projects, have been major factors in bringing about necessary adjustments in the pattern of land use on the prairies.

Where these adjustments have been of considerable benefit to the agricultural economy, new and growing demands for water required by larger municipal and urban centres for domestic and industrial purposes, as well as to support large-scale irrigation, have made necessary the development of larger and more comprehensive water storage and irrigation schemes where more dependable and plentiful water supplies can be obtained. PFRA in more recent years has devoted an increasing amount of its attention to this type of development.

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* Except as otherwise credited, prepared under the direction of S. C. Barry, Deputy Minister of Agriculture, Ottawa.

Prairie Farm Rehabilitation Act

Under the terms of the Prairie Farm Rehabilitation Act, an initial appropriation of $4,750,000 was made to cover the cost of rehabilitation activities for a period of five years, and an Advisory Committee was established to give leadership to the program. Rather than establish new services, existing agricultural services were given assistance to expand their operations to handle the work, particularly the Experimental Farms Service. As the PFRA program developed, a separate administration was set up in Regina (in 1936) to direct water development, while the cultural improvement program continued under the direction of the Experimental Farms Service. Then, by amendment to the Act in 1937, the PFRA was extended to include land utilization and resettlement. It was realized, however, that for the development of a sound agricultural economy on the prairies, more long-term measures for rehabilitation would be necessary. In 1939 therefore, additional financial allocations were made and the five-year limitation to the PFRA was removed.

Water Development.—Projects constructed under the water development program and carried out under the supervision of the Water Development Division of the Agricultural Services Branch, are divided into two main categories according to size of project, number of people benefiting, and cost of construction: (1) individual and neighbour projects and (2) community projects.

Individual and neighbour projects are works serving the needs of one or two farmers. They are generally in the form of small dams and dug-outs that supply water for stockwatering and domestic use and/or for irrigation purposes. PFRA provides all engineering services required to plan and design such projects and a portion of the construction costs. The rate of assistance paid on individual projects is based on yardage of earth moved and amounts to seven cents per cubic yard up to a maximum of $250 for dug-outs, $300 for stockwatering dams and $600 for irrigation projects. Where two or more farmers pool their water resources to build neighbour projects, assistance is paid up to a maximum of $1,000. Responsibility for the actual construction is left to the farmer who either contracts the work out or builds the project himself.

Community projects utilize the waters of well-defined watersheds and are built to serve the needs of groups of farmers. Each project is justified on the basis of its individual merit and the major share of cost is borne by PFRA.

During the 25 years in which PFRA has been engaged in this work, the program has resulted in the construction of more than 65,000 individual and neighbour projects and about 800 community water storage and development schemes.

Major Projects.—While the immediate needs of farmers are being met by PFRA, attention has also been given in more recent years to the construction of larger irrigation and reclamation projects involving the development of many thousands of acres of land. Such undertakings are in line with the long-range land-use plan to provide for expansion and stability in Canada's growing economy. Of an estimated 3,000,000 acres of potentially irrigable land in Western Canada, 1,500,000 acres have been, or are in process of being developed. The intention is, when conditions warrant, to develop the remainder of this valuable resource.

The development of these large irrigation and reclamation works in Western Canada which, either because of their size or their location, have not been included under the regular PFRA appropriation, have been in recent years under the supervision of the Prairie Farm Rehabilitation Administration. They are undertaken by agreement between the Federal Government and the provincial government concerned, on a cost-sharing basis. Special authorization of Parliament is required for such construction.

St. Mary Project.—To make available for irrigation a larger percentage of the water flowing through southern Alberta in the Waterton, Belly, St. Mary and Milk Rivers, a program to extend the original St. Mary Irrigation Project was undertaken by an agreement between the Government of Canada and the Province of Alberta. The Federal

Government agreed to construct the main supply reservoirs and the connecting canals, while the Province of Alberta undertook the responsibility for construction of the irrigation distribution system. When completed, this project will extend irrigation to approximately 510,000 acres of land in the area south of Lethbridge and east beyond Medicine Hat.

Construction of the St. Mary Dam, key structure on the whole project, was completed in 1951. During 1958 the second phase, involving the diversion of the Belly River into the St. Mary Reservoir, was completed. The third step, involving the diversion of the Waterton River into the St. Mary Reservoir by way of the Belly River diversion, is under construction. The present storage and distribution facilities extend irrigation to 296,000 acres of land in the St. Mary Project. With the addition of resources of the Waterton River, a further 214,000 acres of land can be brought under irrigation.

Bow River Project.—The Bow River Irrigation Project, situated west of Medicine Hat in Alberta and having an irrigation potential of 240,000 acres, was taken over by the Federal Government from the Canada Land and Irrigation Company in 1951; the Company had developed about 57,000 acres before financial difficulties caused work to be suspended. PFRA commenced the orderly rehabilitation of the project works and is proceeding with the development of the remainder of the area. The Federal Government is responsible for settlement of the areas surrounding Vauxhall and Hays. These areas have provided farms for 436 settlers, 162 of whom have now been established in the Hays district.

South Saskatchewan River Development Project.—In July 1958 agreement was reached between the Federal Government and the Province of Saskatchewan to start construction on the South Saskatchewan River Project, a large-scale multi-purpose water conservation project proposed for development in south-central Saskatchewan. The purpose of the project is to make better use of the water resources of the river through irrigation, river control, power, urban water supply and recreation. Control will be achieved by two dams, the major one on the South Saskatchewan River at a point approximately half-way between the towns of Outlook and Elbow and the other at the divide between the valleys of the South Saskatchewan and the Qu'Appelle Rivers. The agreement provides that Canada and Saskatchewan will share the cost of building the dams and all other works associated with the creation of the reservoir; 75 p.c will be borne by the Federal Government and 25 p.c. by Saskatchewan, the province's share to be not in excess of $25,000,000.

The project, when completed, will provide water for the irrigation of approximately 500,000 acres of land located in central Saskatchewan on both sides of the South Saskatchewan River between the town of Elbow and the city of Saskatoon and in the Qu'Appelle Valley extending east of Elbow to the Manitoba border. Power installations at the damsite will have a potential output of 475,000,000 kwh. The reservoir, which will be 140 miles long and will store 8,000,000 acre-feet of water, will be constructed at an estimated cost of $96,000,000. The main dam will be 210 feet high and of earth fill, with an over-all length of 16,700 feet. It will be the largest rolled-earth dam ever built in Canada and one of the largest dams of its kind in the world.

Construction was started in the autumn of 1958 and at Dec. 31, 1960, 20 contracts totalling about $25,000,000 had been let. Of these, 15 contracts had been completed, four were in progress on a winter-work basis, and one had been suspended until spring. The value of the completed contracts was $9,382,802. Contracts awarded but not yet completed account for a further amount of about $15,600,000. Partial payments have been made on these contracts, bringing the total expenditure to the end of 1960 to over $16,300,000. In addition to paying 75 p.c. of the cost of construction of the dam, the Federal Government is supplying all engineering, administration and supervisory requirements. To Dec. 31, these totalled approximately $3,400,000, an amount included in the total expenditure.

Saskatchewan River Reclamation Project.—The possibility of successfully reclaiming for agricultural purposes 1,500,000 acres of potentially valuable Saskatchewan River Delta land between Tobin Rapids in Saskatchewan and Cedar Lake in Manitoba has been a subject of speculation and conjecture for many years. With this objective in mind the PFRA began investigations in 1950 and a complete engineering report on the studies conducted has been prepared and submitted to the Federal Government for consideration. In addition, as a result of an agreement reached early in 1953 between the Government of Canada and the Province of Manitoba, work was undertaken on the construction of necessary flood control and drainage works to reclaim about 100,000 acres of arable land in one region of the project referred to as the Pasquia Area, near the town of The Pas in Manitoba. Under the terms of this agreement, the Government of Canada assumed the cost of building the main protective and drainage works and Manitoba the cost of settlement, maintenance of works, and internal drainage. One-quarter of the reclaimed land is to be used for the resettlement of farmers from drought areas and the remainder will be sold. Seventy-five per cent of the proceeds from the sale of the land will go to the Federal Government as partial reimbursement of the costs of building the main protective works. Construction was completed in 1960. Settlement of the area will begin shortly.

North West Escarpment Reclamation Project.—At the request of the Manitoba Government, extensive investigations have been undertaken by PFRA in the Riding, Duck and Porcupine Mountain areas and Whitemud River watershed, where serious flood and erosion problems exist in an area containing over 252,000 acres of valuable agricultural land. The reclamation work, the cost of which is divided equally between the Federal Government and the Province of Manitoba, consists of clearing and dyking stream channels, preventing stream-bank erosion and aligning channels by building cutoffs and diversions. In addition, considerable attention has been given, since 1958, to watershed investigations on the headwaters of Wilson Creek, to discover improved methods of controlling floods and erosion problems in the upper and lower reaches of such streams.

Assiniboine River Project.—Along the Assiniboine River between Portage la Prairie and Headingly in Manitoba, a continual problem of flooding has faced farmers and communities over the years, often causing considerable damage to land, buildings and other property in districts adjacent to the river. During the early years, the federal Department of Public Works looked after most of the flood protection work carried out in the area. In 1950, however, responsibility for the work was transferred to the federal Department of Agriculture under the Prairie Farm Rehabilitation Administration.

Flood control activities carried out by the PFRA along the Assiniboine have mainly involved construction of dykes and channel improvement work. In addition, however, a considerable amount of survey work has been conducted on both the upper and lower reaches of the river, studying potential storage sites that would provide more effective stream-flow regulation throughout the river system.

Land Utilization and Resettlement.—The 1937 amendment to the Prairie Farm Rehabilitation Act broadened its scope to include land utilization and land settlement, opening the way for a program that has had a far reaching effect on the stability of agricultural production in many areas throughout Western Canada. By agreement with the Provinces of Saskatchewan and Manitoba, lands not considered suitable for cereal crop production may be transferred to the Federal Government for development by PFRA into community pastures. The province concerned selects the area to be developed and obtains control of the land. The land is then leased to the Government of Canada which in turn agrees to construct, maintain and improve community pasture facilities in the area selected. In this way, land subject to the hazards of soil drifting is removed permanently from cultivation and is again protected by a grass cover.

As these submarginal and marginal lands are converted into productive pastures, livestock production on the surrounding farms is being increased, thus making possible a greater diversity of farm income. Since the community pasture program began in 1937, a total of 1,886,364 acres of land has been developed into 65 separate pasture units. These pastures, primarily intended for reserve grazing areas to supplement farm and ranch pastures, are now providing controlled spring, summer and fall grazing for over 120,000 head of stock annually, belonging to 6,331 farmers. In addition, a considerable tonnage of hay and some grass seed has frequently been harvested from these pastures. This program of pasture improvement carried on by PFRA has provided leadership to farmers in the development of their own farm pastures.

The resettlement of farmers from these submarginal areas has been handled jointly by the Federal Government and provincial governments concerned. Where available, the provincial governments provide suitable Crown land on which to resettle farmers. PFRA in turn accepts responsibility for moving the farmers and their effects to the new locations, and for developing the submarginal areas for pasture purposes. Every effort is made to resettle farmers on lands located close to existing or proposed pastures. Where no suitable Crown lands are available, PFRA provides its own through irrigation development. Two such schemes have been built specifically for resettlement purposes in Alberta: a large block of land adjacent to the Eastern Irrigation District called the Rolling Hills Project, to which 118 farm families from the drought areas have been moved; and the Bow River Irrigation Project where 162 farm families are now settled in an area of approximately 27,000 acres called the Hays district.

On somewhat the same principal, five resettlement and rehabilitation projects have been built in the heart of the drought area in southwestern Saskatchewan. The only difference is that for these projects the purposes and objectives of the resettlement and rehabilitation program have been achieved without necessarily involving the movement of farmers to new locations. The five schemes—the Val Marie, Eastend, Consul, Maple Creek and Swift Current Irrigation Projects—are subdivided into 40-to-80-acre plots which are leased out or sold to farmers in surrounding districts for feed production. On the irrigated land, farmers can be assured of producing adequate and dependable winter feed supplies as well as reserves of feed to carry stock over prolonged drought periods.

In a similar manner hundreds of farmers have been rehabilitated without the necessity of moving from their farms by the development of farm-size and small community irrigation schemes built throughout the prairies with PFRA assistance.

British Columbia Projects.—The Prairie Farm Rehabilitation Administration has been carrying out irrigation development and land reclamation and providing engineering services in British Columbia since 1944; this work has been undertaken for and in connection with the Veterans' Land Act, the Experimental Farms Service, and at the request of the Province of British Columbia.

Nine irrigation projects have been developed or rehabilitated in the arid central interior of the province. The irrigable land on these projects totals approximately 5,300 acres and provides direct or supplemental living for some 1,400 families engaged mainly in the growing of small fruits and vegetables and in dairying.

Seven of these irrigation projects were constructed for the Veterans' Land Act following the Second World War and benefit approximately 500 veterans. The Johnson Western Canada Ranching Projects, Nos. 1 and 2 (Todd Hill Irrigation District), and the Chase Irrigation Project are located in the South Thompson Valley. The Cawston Benches Project, Westbank Project, Penticton West Bench Project and Bankhead Project are all located in the southern Okanagan Valley and form some of the largest individual developments for veteran settlement in Canada.

The other two developments are located in the Thompson Valley near Kamloops and were constructed in co-operation with the Province of British Columbia. The B.C. Fruitlands Irrigation District includes some 2,000 acres of irrigable land and also some 700 small holdings. This district had been served by a gravity water system from Jamieson Creek for over 40 years which had deteriorated to such an extent that the district could no longer guarantee water to its users. The rehabilitation of this project was undertaken by agreement with the province and the irrigation district concerned, and completed by PFRA in 1958. A pressure irrigation system was also installed by PFRA for the irrigation of 290 acres of the Provincial Sanatorium farm lands at Tranquille.

A major reclamation project was undertaken in the Lillooet Valley upon agreement between the Federal Government, the Government of British Columbia, and the Pemberton Valley Dyking District. This project involved the reclamation of the lower 20 miles of the Lillooet River Valley through dyking, drainage and channel improvement to reclaim some 12,000 acres of agricultural land and to protect an additional 2,000 acres already under cultivation.

Engineering services have been provided by PFRA to the Experimental Farms and to other government agencies as requested. Some of these services have included surveys in the Fraser River Basin for the federal-provincial Fraser River Board, reports on proposed project development and reclamation in British Columbia, and services to the Experimental Farms for the establishment and improvement of farm water supplies and irrigation systems.

Maritime Marshland Rehabilitation Act

The MMRA program was instituted by federal legislation in 1948 to provide assistance to the Provinces of Nova Scotia, New Brunswick and Prince Edward Island in preserving and developing tidal marshland areas, most of which are situated adjacent to tributaries of the Bay of Fundy. The areas are subject to flooding by tide water unless protected by systems of dams or dykes and aboiteaux (freshwater control structures). The soils are potentially productive and when properly used yield excellent crops.

Responsibility for the rehabilitation of approved marshland areas is shared by the provincial and federal governments. The latter undertakes the construction of works required to prevent flooding of lands by saltwater, maintains the structures until this responsibility is turned over to the provinces, and provides engineering services required in connection with the program. The provincial governments organize the owners of land and ensure that the marshland areas are adequately drained and that suitable land-use policies are developed and encouraged.

By Mar. 31, 1960, the provinces had requested the protection of some 95,450 acres from saltwater flooding. Structures had been completed to protect 76,813 acres and plans were under way to reclaim an additional 3,750 acres (Nova Scotia, 43,635 acres; New Brunswick, 36,653 acres; and Prince Edward Island, 275 acres). This acreage forms parts of approximately 3,500 farms having a total area of over 450,000 acres.

Conventional structures for the protection of marshlands are normally considered to be dykes and aboiteaux, supplemented by stream-bank control works. It has been found feasible to construct aboiteaux or dams across some tidal streams which eliminate the need for dykes and aboiteaux upstream of the proposed site and permit more efficient drainage of the land protected. Two of the more important structures of this type are the Annapolis River Dam in Nova Scotia and the Tantramar River Dam in New Brunswick, both in full operation. Each was undertaken on a share basis with a provincial authority as they serve as river crossings for traffic and eliminate the need to rebuild highway bridges at these locations in the future. The structures consist of rock-fill dams and freshwater discharge control gates; they were constructed on tidal rivers having tide ranges in excess of 30 feet and 40 feet, respectively. The addition of power-generating facilities to harness some of the energy produced by the tide at Annapolis Royal, N.S., was studied and found possible, but the cost was too high to warrant further consideration.

Canada Water Conservation Assistance Act*

To help municipal and provincial governments with financing major water conservation and control projects the Canada Water Conservation Assistance Act was passed by Parliament in 1953. Under the Act, the Federal Government may enter into an agreement with any province providing up to 37½ p.c. of the cost of a major water conservation project that is considered to be beyond the normal financial means of the provincial and municipal governments involved.

During 1961, the Federal Government signed three agreements with the Government of Ontario providing federal financial participation in three major water conservation projects. In each project, the estimated cost was distributed among the federal and provincial governments and a conservation authority, the two governments each contributing 37½ p.c. of the cost and the conservation authority the remaining 25 p.c.

The first agreement under the Act was signed Jan. 28, 1961, providing federal assistance to a $9,640,500 flood control and water conservation project in the Upper Thames River basin. The Upper Thames River Conservation Authority, a grouping of 31 municipalities, will pay 25 p.c. of the cost of construction of five dams and three channel improvement works included in the project and will administer the completed project. Construction of the works will be spaced over a 10-year period.

Other agreements signed between Canada and Ontario provided for federal cost-sharing in the construction of the $825,000 Parkhill Dams in the Ausable River watershed in western Ontario and the $24,000,000 flood control and water conservation works that will be built along the Humber and Don Rivers in the Metropolitan Toronto area. The conservation authorities involved in these projects are, respectively, the Ausable River Conservation Authority and the Metropolitan Toronto and Region Conservation Authority.

To be eligible for federal assistance under the Canada Water Conservation Assistance Act, a project must meet three conditions. The works must be designed primarily for flood control or other beneficial uses. It must be major in character in relation to the financial capability of the province entering into the agreement. It also must be beneficial to a community as a whole. The Act requires that complementary conservation measures be carried out in addition to the primary flood control and water conservation works.

Prior to the passing of this legislation, the Federal Government provided 37½ p.c. of the cost of building the Shand and Luther Marsh Dams on the Grand River, the Conestogo Dam on the Conestogo River, and the Fanshawe Dam on the Thames River.

Subsection 2.—Provincial Projects

Saskatchewan.†—The Conservation and Development Branch of the Saskatchewan Department of Agriculture was established in 1949 to administer water rights in the province and to carry on an active program in irrigation, drainage, flood control and land reclamation and development. Program emphasis has varied from year to year; drainage and flood control were of greatest importance during most of the 1950's but, because of the drier weather during the past three years, irrigation and community pasture development have taken precedence. The following is a summary of Branch activities to Mar. 31, 1960.

Water Rights.—In addition to administering the provisions of the Water Rights Act, further responsibilities were added to Branch responsibilities by the Ground Water Conservation Act which came into force on July 1, 1959. This Act requires every water-well driller to hold a licence and to provide certain drilling reports and formation samples. Licences were granted to 86 drillers, who submitted drilling reports on 496 operations. At Mar. 31, 1960, 5,962 Water Right licences were in good standing, involving storage of 455,598 acre-feet of water.

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* Prepared in the Editorial and Information Division, Department of Northern Affairs and National Resources, Ottawa.

† Revised by the Deputy Minister, Saskatchewan Department of Agriculture.

Irrigation Development.—Up to the end of March 1960, 54 irrigation projects had been initiated on which topographic surveys had been conducted on 163,128 acres. In addition, 326 miles of ditch had been constructed and 1,586 water-control structures built. Forty-five Water Users' Districts were organized, comprising some 202,669 acres.

Drainage and Flood Control.—Some work was done on 453 drainage and flood control projects. Topographic surveys were carried out on 191,865 acres, some 659 miles of ditch dug and 921 control structures built.

Land Development and Pasture Construction.—A total of 152 land development and community pasture projects had been worked on up to the end of the 1959-60 fiscal year. Some 68,717 acres of forage had been seeded and 1,113 miles of fence constructed. Approximately 750,000 trees had been planted in the afforestation program.

Community Pastures.—Through the Lands Branch of the provincial Department of Agriculture, the province has transferred title to 1,195,978 acres and leased without charge another 356,374 acres of land to PFRA for community pastures. Outside the PFRA program, the province has another 880,819 acres in 136 community pastures operated by co-operative associations, by municipalities or by the provincial Department of Agriculture; in 1960, 26 pastures operated by the province provided grazing for 25,000 head of cattle owned by 1,621 local farmers.

Development of Land for Cultivation.—Crown lands, either under cultivation or suitable for cultivation, are leased for 33-year periods. The province may reimburse farmers in cash for the cost of clearing and breaking virgin land or the farmers may retain crop shares equivalent in value to costs sustained. To Mar. 31, 1960, the investment of the province for land clearing and breaking amounted to $7,960,961, and included work done in six settlement projects involving initial clearing and breaking on about 200 farm units before the land was leased.

Alberta.*—The Alberta Water Resources Act gives the Minister of the Department of Agriculture wide powers to investigate the water resources of the province and extensive surveys have been carried out to determine the distribution and extent of the available water supply in the province and the most beneficial use for irrigation, water power and other purposes. The Water Resources Branch of the provincial Department of Agriculture administers the licensing of water power projects and the construction work in several irrigation projects. Irrigation projects are also licensed and water allocated for domestic and irrigation purposes. Other work includes administration of drainage districts, co-operation on the Peace River dug-out project and on river protection projects where flooding occurs. In more recent years much of this work has been carried out by the Federal Government in co-operation with the Government of Alberta.

Stream measurement is being done by the Hydrometric Service of the federal Department of Northern Affairs and National Resources, and irrigation surveys are carried out largely by the water development organization under PFRA (see p. 421).

The figures given in Table 4 of land actually irrigated in Alberta in 1959 are only approximate because, while there are increases resulting from the creation of new pump irrigated areas, there are also decreases caused by soil reclassification and less water use, depending on natural precipitation. Seepage and alkali problems also have an effect on acreage quoted as irrigable. Figures for small private irrigation projects have been omitted because of their uncertain water supply.

Gross cash returns from the irrigable area are estimated at $30,000,000 though this figure does not take into account the value of stockwater supplied through irrigation works. Nor does it include many other credit items that are difficult to evaluate such as the recreational use of water which, to these one-time semi-arid areas, is particularly important, and the value of fish taken from irrigation reservoirs which is known to be quite significant. Several communities receive their entire domestic water supply via irrigation canals.

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*Revised in the Deputy Minister's office, Alberta Department of Agriculture.

4.—Major Irrigation Districts in Alberta, 1959

District	Classified Irrigable Area	Area Actually Irrigated in 1959
	acres	acres
St. Mary and Milk Rivers Development	259,861	192,864
Magrath Irrigation District	7,885	7,000
Raymond Irrigation District	19,058	15,800
Taber Irrigation District	32,100	25,426
Western Irrigation District	50,000	9,930
Eastern Irrigation District	250,000	188,721
Bow River Development—		
Federal	94,783	52,250
Provincial	35,217	2,264
Mountain View Irrigation District	3,600	2,789
Leavitt Irrigation District	4,631	1,542
Aetna Irrigation District	8,303	360
United Irrigation District	34,005	17,761
Lethbridge Northern Irrigation District	96,135	46,459
Ross Creek Irrigation District	2,069	1,400
Macleod Irrigation District	3,000	—
Totals	**900,647**	**564,566**

British Columbia.*—About 20 p.c. of the arable land in British Columbia is under cultivation and nearly all the grazing area is being utilized. The 1,200,000 acres of improved land gives a ratio of about three-quarters of an acre per person. Within this arable area there exist an estimated 217,000 acres of irrigated land, and the additional acreage of irrigable land in British Columbia is estimated at 400,000 acres. About three-quarters of the irrigated area is made up of individual projects and the other quarter is served by the larger irrigation projects listed in Table 5.

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*Revised by the Comptroller of Water Rights, British Columbia Department of Lands and Forests.

5.—Major Irrigation Projects in British Columbia, January 1961

Project	Water Supply	Potential Irrigable Area	Irrigated Area	Water Service Charge on Grade A Land per Acre	Locality
		acres	acres	$	
Provincial Irrigation System—					
Southern Okanagan Lands Project	Okanagan River	7,770	4,770	12.50	Okanagan Valley
Municipal Irrigation Systems—					
Penticton Municipality	Penticton and Ellis Creeks	2,099	1,992	24.00/20.00	Okanagan Valley
Summerland Municipality	Trout and Eneas Creeks	3,450	3,405	14.91	"
Irrigation Districts—					
Balfour	Laird Creek	240	150	—	Kootenay Valley
Bankhead	Kelowna and Mission Creeks	85	85	20.00	Okanagan Valley
Barriere	Barriere River	181	129	4.50	North Thompson Valley

5.—Major Irrigation Projects in British Columbia, January 1961—concluded

Project	Water Supply	Potential Irrigable Area	Irrigated Area	Water Service Charge on Grade A Land per Acre	Locality
		acres	acres	$	
Irrigation Districts—concl.					
B.C. Fruitlands	Jameson and North Thompson Rivers	2,260	1,730	16.20	North Thompson Valley
Black Mountain	Mission Creek and others	4,264	3,695	15.00	Okanagan Valley
Black Sage	Okanagan River	184	174	17.00	"
Blueberry Creek	Blueberry Creek	133	66	15.00	Columbia Valley
Boundary Line	Osoyoos Lake	94	94	15.93	Okanagan Valley
Brent Davis	Mission Creek	480	405	5.00	"
Cawston	Similkameen River	650	500	14.00	Similkameen Valley
Chase	Chase Creek	639	639	3.50	South Thompson Valley
Covert	4th of July Creek	280	280	8.00	Kettle Valley
East Creston	Arrow Creek	1,415	1,220	5.00	Kootenay Valley
East Osoyoos	Osoyoos Lake	329	188	28.50	Okanagan Valley
Ellison	Kelowna Creek	760	662	6.95	"
Erickson	Sullivan Creek	105	105	5.00	Kootenay Valley
Fairview Heights	Similkameen River	629	629	28.00	Similkameen Valley
Glenmore	Kelowna Creek	1,895	1,895	13.00	Okanagan Valley
Grand Forks	Kettle River	2,500	2,328	6.00	Kettle Valley
Heffley	North Thompson River	1,653	1,653	2.64	North Thompson Valley
Kaleden	Marron River and Shatford Creek	542	542	18.00	Okanagan Valley
Keremeos	Ashnola River, etc.	1,022	1,022	16.00	Similkameen Valley
Lakeview	Lambly (Bear) Creek	1,100	1,056	11.00	Okanagan Valley
Malcolm Horie	Joseph Creek	150	150	7.50	Kootenay Valley
Naramata	Naramata, Lequime and Robinson Creeks	974	974	24.75	Okanagan Valley
North Canyon	Camp Run (Association) Creek	436	339	1.50	Kootenay Valley
Okanagan Falls	Okanagan River	244	142	12.00 gravity 22.00 sprinkling	Okanagan Valley
Okanagan Mission	Bellevue Creek and Okanagan Lake	534	534	20.00	"
Osoyoos	Haynes Creek, etc.	244	224	22.50	"
Oyama	Long Lake	362	362	22.00	"
Peachland	Peachland Creek	550	444	17.00	"
Renata	Dog Creek	122	122	7.00	Columbia Valley
Robson	Pass Creek	262	250	6.00	"
Scotty Creek	Scotty Creek	844	844	4.50	Okanagan Valley
Shuttleworth Creek	Shuttleworth Creek	282	109	8.00	"
South East Kelowna	Hydraulic Creek	3,088	3,088	16.00	"
South Vernon	Vernon Creek	354	254	5.00	"
Todd Hill	South Thompson River	146	118	15.00	South Thompson Valley
Trout Creek	Trout Creek	318	278	9.00	Okanagan Valley
Vermilion	Kindersley Creek	300	300	6.25	Columbia Valley
Vernon	Coldstream Creek, etc.	8,047	6,668	5.00	Okanagan Valley
Vinsulla	Knouff Creek	298	175	—	North Thompson Valley
Westbank	Powers Creek	1,008	799	15.30	Okanagan Valley
West Bench	Okanagan River	224	200	45.00	"
Wilmer	Wilmer Creek	241	109	5.00	Columbia Valley
Winfield and Okanagan Centre	Vernon Creek	1,897	1,843	6.00	Okanagan Valley
Wyndel	Duck Creek	498	410	4.00	Kootenay Valley
Irrigation Companies—					
Wood Lake Water Company	Oyama Creek	832	832	7.50	Okanagan Valley

Section 4.—Statistics of Agriculture*

The collection, compilation and publication of statistics relating to agriculture is a responsibility of the Dominion Bureau of Statistics. Valuable information obtained through the Censuses of Canada and partial-coverage surveys may be obtained in reports issued by the Bureau.†

The Bureau also collects and publishes primary and secondary statistics of agriculture on an annual and monthly basis. The primary statistics relate mainly to the reporting of crop conditions, crop and livestock estimates, wages of farm labour and prices received by farmers for their products. The secondary statistics relate to farm income and expenditure, per capita food consumption, marketing of grain and livestock, dairying, milling and sugar industries and cold storage holdings. In the collection of annual and monthly statistics, the federal Department of Agriculture and the provincial Departments of Agriculture, as well as such agencies as the Board of Grain Commissioners and the Canadian Wheat Board, co-operate with the Bureau. Also, many thousands of farmers throughout Canada send in reports voluntarily. The figures contained in this Section do not include estimates for Newfoundland. Agriculture plays a relatively minor part in Newfoundland's economy, commercial production of most agricultural products being quite small.

A review of agricultural production and trade covering 1960 is given in Subsection 1; details for the year 1959 are presented in Subsections 2 to 4 and 7 to 9. At the time of going to press, 1960 details were available only for livestock and poultry and dairying, given is Subsections 5 and 6.

Subsection 1.—Review of Agricultural Production and Trade, 1960

The upward trend experienced by the Canadian economy, which began in mid-1958 following a mild recession, was again interrupted in 1960. Gross national product in that year was only about 3 p.c. above the level of the previous year, whereas the 1959 estimate was nearly 7 p.c. above that of 1958. It is estimated that the physical volume of output in 1960 was about 2 p.c. above that of 1959, with final product prices higher by approximately 1.5 p.c. The physical volume of agricultural output was higher in 1960 than in the previous year, largely as a result of increased production of grain, potatoes, tobacco and maple products.

Preliminary estimates place farm net income for 1960 at $1,352,199,000, about 12 p.c. above the revised estimate of $1,206,325,000 for 1959. Although cash income from the sale of farm products was down slightly and operating expenses continued to rise, these two items were more than offset by an increase in farm-held inventories of grains and livestock, and larger supplementary payments.

Field Crops.—Canada's 1960 wheat crop amounted to 489,600,000 bu., compared with the 1959 crop of 413,500,000 bu. and the 1958 crop of 371,700,000 bu. Total supplies of wheat in the 1960-61 crop year (carryover at July 31 plus the 1960 crop) amounted to 1,027,200,000 bu. compared with 962,500,000 bu. in the previous year. The 1960 oat crop of 456,100,000 bu. was 38,200,000 bu. larger than in 1959, while production of barley at 207,000,000 bu. was below the 1959 level of 225,600,000 bu. Total supplies of oats and barley for the 1960-61 crop year amounted to 549,000,000 bu. and 328,500,000 bu., respectively. The combined fall and spring rye crop was estimated at 10,100,000 bu., giving total supplies for the 1960-61 crop year of 16,900,000 bu.

Reduced carryover stocks of oats, barley and rye and a smaller barley, corn and mixed grain crop in 1960 brought total supplies of Canadian feed grains in the crop year 1960-61 down about 2 p.c. below those of 1959-60, despite higher levels of production for oats, rye and buckwheat. Crop-year supplies of oats (the Aug. 1 carryover of 92,800,000 bu. and the 1960 production of 456,100,000 bu.) amounted to 549,000,000 bu., an increase of 2 p.c.

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*Revised in the Agriculture Division, Dominion Bureau of Statistics.
†Copies obtainable from the Dominion Statistician or the Queen's Printer, Ottawa.

over the 1959-60 total of 536,900,000 bu. Supplies of barley at 328,500,000 bu. were 7 p.c. less than the 1959 total of 353,700,000 bu. and consisted of a carryover of 121,500,000 bu. and a crop of 207,000,000 bu.

Net supplies of feed grains available in 1960-61 at 17,000,000 tons were about 1 p.c. less than the 1959-60 total of 17,100,000 tons. Relative to livestock, the net supply of feed grain per grain-consuming animal unit was placed at 1.04 tons, 7 p.c. above the 1959-60 level of 0.97 tons and about 3 p.c. higher than the ten-year average of 1.01 tons. The increase over the previous year reflected a 7-p.c. decrease in grain-consuming animal units, which more than offset the effect of smaller net supplies. The livestock population in Canada, estimated as at June 1, 1960, was the equivalent of 16,300,000 grain-consuming animal units compared with the June 1, 1959 level of 17,600,000.

Production of sugar beets in 1960 was estimated at 1,093,000 tons compared with the 1958 record outturn of 1,325,000 tons. Average yield per acre was 12.72 tons in 1960, considerably less than the 1959 record yield of 13.70 tons. Alberta accounted for 51 p.c. of the total production and Manitoba was the next largest producer.

The dried pea crop of 993,000 bu. in 1960 reflected the effect of reductions in seeded acreage which was only partly offset by an increase in average yield. Imports amounted to 96,000 bu. and exports to 240,000 bu. in the 1959-60 crop year. Production of dried beans was 1,012,000 bu., Ontario being the chief grower. Exports in the 1959-60 crop year were 189,700 bu., about three times greater than in 1958-59, and imports, at 104,200 bu., were 25 p.c. lower than in the previous year.

The soybean crop of 5,675,000 bu. in 1960 was smaller than the 1959 crop of 6,828,000 bu. In the 1959-60 crop year, 184,000,000 lb. of oil and 801,000,000 lb. of oil meal were produced in Canada. Imports of soybeans, mostly from the United States, amounted to 14,000,000 bu. and exports, mostly to the United Kingdom, were 3,000,000 bu.

The flaxseed crop at 25,114,000 bu. was about 42 p.c. above 1959 production. Acreage sown was up by 31 p.c. and the average yield increased from 8.2 bu. to 8.9 bu. per acre. Total supplies in the 1960-61 crop year were estimated at 30,000,000 bu. Crushings in 1959-60 of 146,000,000 lb. of flaxseed yielded 51,000,000 lb. of linseed oil and 90,000,000 lb. of oil meal. Exports at 12,500,000 bu. were lower than in the previous year.

Livestock.—The sharp reduction of 21 p.c. in hog gradings and increases of 11.3 p.c. and 5.3 p.c., respectively, in the inspected slaughter of cattle and calves, as well as reduced exports of live beef animals to the United States, were the outstanding features of the livestock situation in 1960.

The number of hogs on farms, estimated at 5,480,000 head on June 1, 1960, was 20 p.c. lower than the corresponding estimate for 1959. However, by Dec. 1, 1960 the number had increased to 5,526,000 head and the difference from the year-earlier estimate was reduced to 14 p.c., indicating that an up-turn in the cycle of production was starting. The build-up of cattle numbers continued in 1960 and Dec. 1 estimates indicated an increase of 4 p.c. during the year, most of which was in cows kept for beef purposes and in carry-over of calves and steers being fed in Canada.

Price movements are indicated by the following annual average calculations of prices on the Toronto market, with 1959 prices in parentheses: good steers, $22.65 ($25.10); good feeders steers, $22.90 ($25.10); good lambs, $21.85 ($21.15); and Grade A hogs, dressed, $24.75 ($24.80).

Dairying.—Milk production in 1960 reached a new record at 18,433,000,000 lb., about 1.4 p.c. higher than the 1959 output. Increases in Quebec, Ontario, Alberta and British Columbia more than offset, to that extent, decreases in the other provinces. Most of the increase in 1960 over 1959 was utilized in the manufacture of concentrated whole milk products. The output of creamery butter was lower by 1.8 p.c. at 319,900,000 lb., but factory cheese rose about 1.8 p.c. to 121,300,000 lb.

Annual per capita consumption of creamery butter continued to decline, dropping 1.23 lb. to 16.15 lb. in 1960. As a result, despite lower production and larger than normal exports amounting to 3,014,000 lb. in 1960, creamery butter stocks on hand at the end of the year amounted to 113,802,000 lb., the largest carryover on record.

The output of concentrated whole milk production, normally only slightly in excess of domestic requirements, was 11 p.c. above those requirements in 1960, with government policy encouraging diversion of milk from butter into whole milk powder. Exports and per capita consumption increased 49.3 and 3.6 p.c., respectively, over 1959. Skim milk powder production at 166,800,000 lb. was 9,618,000 lb. below production in 1959 and 18,800,000 lb. below the peak reached in 1958. Exports declined from 110,500,000 lb. in 1959 to about 48,000,000 lb. in 1960 and domestic disappearance at 116,700,000 lb. was 3.8 p.c. below the record high Canadian utilization of 1959.

Fruits and Vegetables.—The apple crop, which is the most important of the fruit crops, was estimated at 13,100,000 bu. in 1960, 16 p.c. below the 1959 output. Production of plums and prunes, peaches, cherries, raspberries and loganberries was also lower. Crops were smaller in all producing provinces, with the exception of British Columbia. Minimum prices for all fruits for processing were higher than in 1959, except for a certain size of Kieffer pears.

Commercial vegetable growers planted 215,000 acres in 1960 as compared with 205,000 acres in 1959.

Other Principal Farm Products.—The 1959 *tobacco* crop was estimated at 170,255,000 lb., green weight, compared with 197,302,000 lb. in 1958. Ontario flue-cured tobacco was calculated at 147,000,000 lb. as against 176,322,000 lb. in 1958. About 129,000 acres were planted to tobacco, 119,000 acres in southern Ontario which was 6,000 acres less than in the previous year. In 1959 the Ontario Flue-cured Tobacco Growers' Marketing Board reduced the basic acreage allotment per farm by 15 p.c. after allowing a basic exemption per farm of 15 p.c. and alloting acreage to more than one hundred new farms. It is interesting to note that research has made possible the raising of tobacco in the Ottawa Valley of Ontario and in the Annapolis Valley of Nova Scotia; so far production in these areas is on a small scale.

The per capita cigarette consumption in Canada, calculated on the basis of total population, has increased considerably during the past few years, amounting to 1,678 in 1956, 1,817 in 1957, 1,901 in 1958, and 1,939 in 1959.

The *potato* crop, estimated at about 43,790,000 cwt. for 1960, recorded an increase of 20 p.c. over the 1959 crop of 36,532,000 cwt.

Fewer *eggs* were marketed through registered stations in 1960 than in 1959. Although the weighted egg price to producers for the first six months of 1960 declined to 24.9 cents from 29.4 cents for the same period in 1959, the price for the whole year at 29.8 was 0.6 cents higher than a year earlier. Egg price support to producers by means of deficiency payments under the Agricultural Stabilization Act began with the marketing year commencing Oct. 1, 1959 and will continue to Sept. 30, 1961 at an average of 33 cents per doz. for Canada Grade A Large and Extra Large.

Wool prices rose slightly from 1959 to 1960, and payment under the Agricultural Stabilization Act was increased from 21 to 23 cents per lb. Total farm value of shorn wool production increased from $3,016,000 to $3,168,000. Production was estimated at 6,891,000 lb. as compared with 6,800,000 lb. in 1959.

The 1960 *maple crop*, expressed as syrup, was estimated at 2,719,000 gal., about 15 p.c. above that of 1959 and 10 p.c. above the average production for the years 1953-57. The bulk of the crop was produced in the Province of Quebec. Exports of sugar in 1960 stood at 5,900,000 lb., about 20 p.c. lower than in the previous year. The value of the 1959 maple crop was estimated at $9,468,000, 12 p.c. more than in 1958.

The 1960 *honey crop* was estimated at 32,167,000 lb., 2 p.c. above that of 1959. The slight increase in production was accounted for by much higher average yields in the Prairie Provinces and in British Columbia. There was a reduction in the number of active beekeepers from 14,180 in 1959 to 12,420 in 1960 and colony numbers declined by 5,000 to a total of 325,540 in 1960. The production increase was thus attributable to a higher average yield—99 lb. per colony in 1960 compared to 95 lb. for 1959. The average for the years 1949-58 was 78 lb. per colony.

Subsection 2.—Cash Income from the Sale of Farm Products, 1959*

During 1959, Canadian farmers received an estimated $2,786,000,000 from the sale of farm products, participation payments on previous years' grain crops, net cash advances on farm-stored grains, and deficiency payments made under the present farm prices support program. This estimate is only slightly below the 1958 level of $2,813,000,000 and compares with the record high estimate of $2,859,000,000 realized in 1952. Income from the sale of livestock and animal products during 1959 was slightly lower than a year earlier, whereas returns from the sale of field crops were slightly higher. In addition to the above cash receipts, farmers in Western Canada received, in 1959, supplementary payments totalling $22,100,000, most of which represented payments made under the provisions of the Prairie Farm Assistance Act. This was in contrast to the 1958 supplementary payments of over $60,000,000 which, in addition to Prairie Farm Assistance payments, included most of the $40,000,000 distributed under the Western Grain Producers Acreage Payment Regulations. Provincially, the greatest absolute declines in farm cash income in 1959 took place in Alberta and Saskatchewan, followed by Ontario, Quebec and New Brunswick. Little change occurred in cash returns in British Columbia, while some increase was recorded for Manitoba, Prince Edward Island and Nova Scotia.

Field Crops.—Total returns from field crops, which include fruits and vegetables as well as Canadian Wheat Board participation payments and net cash advances on farm-stored grains, amounted to $997,000,000, little different from the $996,600,000 realized from this source one year earlier. While returns from particular commodities within this group differed between 1958 and 1959, they tended to be offsetting. Income from wheat at $422,300,000 was down by $13,000,000 and from oats at $22,100,000 was $7,000,000 below the 1958 level; marketings of both wheat and oats were smaller.

A lower output of fruits in 1959 was reflected in a total cash income from this source of $35,800,000, as against $43,800,000 in the previous year. On the other hand, larger returns were realized from Canadian Wheat Board participation payments, net cash advances on farm-stored grains and sales of such commodities as flaxseed, barley, potatoes and tobacco. In the case of flaxseed, substantially higher marketings were combined with higher prices. Increased prices of potatoes more than offset a decline in marketings.

Livestock and Animal Products.—Farmers received about $1,750,000,000 from the sale of livestock and animal products in 1959, only slightly less than in 1958. Income from cattle and calves, estimated at $574,890,000, was about 6 p.c. below that of 1958 as a result of smaller marketings. Prices for both cattle and calves at the farm level were, on the average, higher in 1959 than in 1958; it was not until the last quarter of the year that cattle prices in general declined to levels slightly below those for the corresponding quarter in 1958. The drop in marketings can be attributed in large measure to a softening of the United States market for live cattle and to a continued build-up of beef cow numbers on Canadian farms. The effects of the decline on income from the sale of cattle and calves were offset in part by higher returns from hogs. A very substantial increase in marketings more than counterbalanced a fairly significant decline in average price and returns rose from $325,094,000 in 1958 to $343,884,000 in 1959.

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* Excludes Newfoundland.

Income from dairy products during 1959 totalled nearly $515,000,000, about $19,000,000 more than in the previous year, as a result of both higher prices and increased production. Producers' returns from the sale of eggs were estimated at $139,634,000, 6 p.c. below the amount realized in 1958; somewhat higher production was offset by lower prices.

6.—Cash Income from the Sale of Farm Products, 1957-59

Item	1957[r]	1958[r]	1959
	$'000	$'000	$'000
Grains, Seeds and Hay	**691,331**	**691,271**	**698,904**
Wheat	379,415	435,493	422,259
Wheat participation payments	79,314	64,258	72,662
Oats	37,845	28,809	22,100
Oats participation payments	—	—	2,072
Barley	76,295	80,238	83,204
Barley participation payments	—	7,570	6,121
Canadian Wheat Board net cash advance payments	24,990	−3,400	2,472
Rye	4,003	5,556	4,917
Flaxseed	58,238	36,228	49,164
Corn	22,370	23,157	22,189
Clover and grass seed	7,785	12,240	10,516
Hay and clover	1,076	1,122	1,228
Vegetable and Other Field Crops	**194,058**	**214,356**	**215,314**
Potatoes	37,985	42,067	43,654
Vegetables	63,091	71,274	70,076
Sugar beets	16,192	17,365	13,004
Tobacco	76,790	83,650	88,580
Livestock and Poultry	**917,476**	**1,099,159**	**1,067,993**
Cattle and calves	481,707	613,385	574,890
Sheep and lambs	10,111	10,679	10,556
Hogs	292,142	325,094	343,884
Poultry	133,516	150,001	138,663
Dairy Products	**459,824**	**495,565**	**514,685**
Fruits	**42,544**	**43,795**	**35,795**
Other Principal Farm Products	**158,130**	**162,618**	**154,193**
Eggs	143,256	148,960	139,634
Wool	2,267	2,926	2,890
Honey	5,606	5,025	5,248
Maple products	7,001	5,707	6,421
Miscellaneous Farm Products	**48,754**	**53,416**	**53,190**
Forest Products	**46,140**	**37,388**	**32,901**
Fur Farming	**15,084**	**15,731**	**13,031**
Totals, Cash Income from Farm Products	**2,573,341**	**2,813,299**	**2,786,006**
Supplementary payments[1]	1,987	60,128	22,087
Totals, Cash Income	**2,575,328**	**2,873,427**	**2,808,093**

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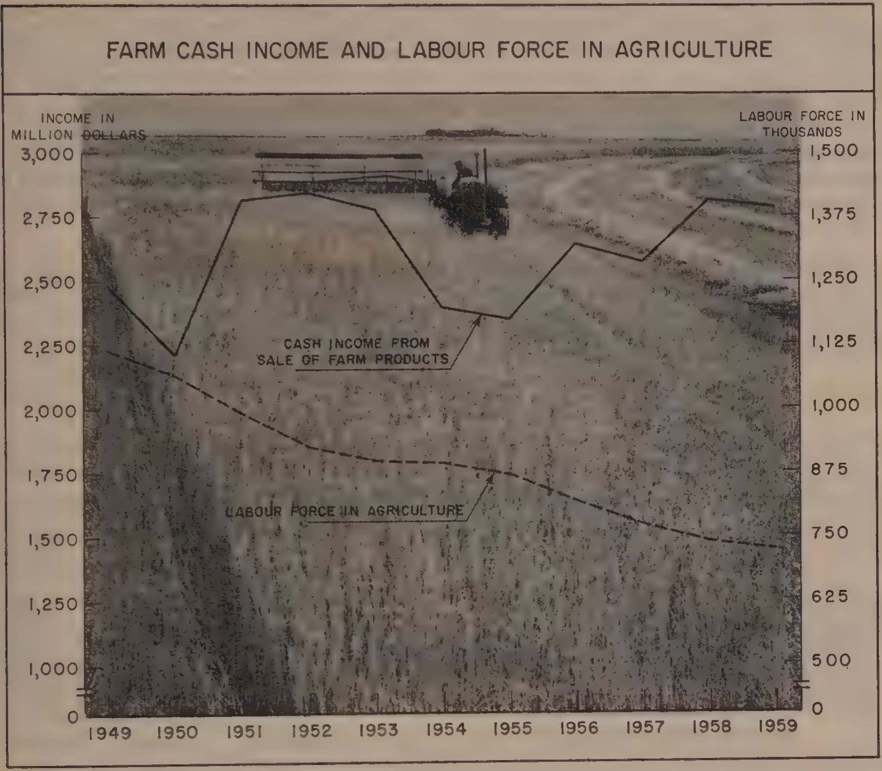
[1] Includes payments made under the Prairie Farm Assistance Act and the Western Grain Producers Acreage Payment Regulations; other government subsidies are included in income from individual commodities.



7.—Cash Income from the Sale of Farm Products, by Province, 1957-59

Province	1957r	1958r	1959
	$'000	$'000	$'000
Newfoundland	—	—	—
Prince Edward Island	24,476	27,792	28,323
Nova Scotia	41,956	41,656	42,941
New Brunswick	43,897	45,922	44,692
Quebec	383,341	423,644	420,938
Ontario	790,199	872,283	867,302
Manitoba	199,767	221,998	223,019
Saskatchewan	537,282	573,352	559,326
Alberta	436,346	484,697	476,774
British Columbia	116,077	121,955	122,691
Totals	**2,573,341**	**2,813,299**	**2,786,006**

Net Income of Farm Operators from Farming Operations.—Two concepts are used in preparing estimates of farm net income from farming operations. One is called *Realized Net Income* and is obtained by adding together cash income from the sale of farm products, supplementary payments and the value of income in kind and deducting farm operating expenses and depreciation charges. The other is referred to as *Total Farm Net Income* and is obtained by adjusting realized net income to take into account changes occurring in inventories of livestock and stocks of grains on farms between the beginning and end of the year.

Realized Farm Net Income.—For the year 1959, it is estimated that the realized net income of Canadian farmers from farming operations amounted to $1,260,300,000. These returns are below the estimate of $1,417,700,000 for 1958 but are higher than the $1,197,000,000 estimated for 1957 and the average level of $1,210,800,000 established for the five-year period 1954-58. Increased operating expenses and depreciation charges, together with smaller supplementary payments and a decline in farm cash income, accounted for most of the reduction in realized net income between 1958 and 1959. The gain in 1959 over the five-year average for 1954-58 can be attributed to the fact that increases in farm cash income, income in kind, and supplementary payments more than offset higher farm operating expenses and depreciation charges.

Total Farm Net Income.—Taking into account changes in farm-held inventories of grains and livestock, total farm net income for 1959 is estimated at $1,191,900,000. These net returns are below the estimate of $1,353,100,000 for 1958, but are above the 1957 level of $1,058,300,000. The five-year (1954-58) average was $1,236,900,000.

8.—Net Income of Farm Operators from Farming Operations, 1957-59

(Exclusive of Newfoundland)

NOTE.—Includes estimated value of farm homes, supplementary payments made under the provisions of the Prairie Farm Assistance Act and, in 1958 and 1959, payments under the Western Grain Producers Acreage Payment Regulations.

Item	1957[r]	1958[r]	1959
	$'000	$'000	$'000
1. Cash income	2,573,341	2,813,299	2,786,006
2. Income in kind	328,069	340,071	342,686
3. Supplementary payments	1,987	60,128	22,087
4. Realized gross income (Items 1+2+3)	2,903,397	3,213,498	3,150,779
5. Operating and depreciation charges	1,706,439	1,795,815	1,890,494
6. Realized net income (Items 4−5)	1,196,958	1,417,683	1,260,285
7. Value of inventory changes	−138,690	−64,621	−68,415
8. Total gross income (Items 4+7)	2,764,707	3,148,877	3,082,364
Totals, Net Income (Items 8−5)	**1,058,268**	**1,353,062**	**1,191,870**

9.—Net Income of Farm Operators from Farming Operations, by Province, 1957-59

NOTE.—Net income includes estimated rental value of farm homes, supplementary payments made under the provisions of the Prairie Farm Assistance Act and, in 1958 and 1959, payments under the Western Grain Producers Acreage Payment Regulations.

Province	1957[r]	1958[r]	1959
	$'000	$'000	$'000
Newfoundland	—	—	—
Prince Edward Island	9,542	12,247	11,813
Nova Scotia	16,143	15,165	14,631
New Brunswick	20,499	19,703	17,702
Quebec	185,035	206,507	180,826
Ontario	330,127	401,797	328,643
Manitoba	74,835	129,580	100,108
Saskatchewan	183,277	246,885	243,310
Alberta	185,640	264,075	239,527
British Columbia	53,170	57,103	55,310
Totals	**1,058,268**	**1,353,062**	**1,191,870**

Subsection 3.—Volume of Agricultural Production*

Canada's index of physical volume of agricultural production is estimated at 143.6 (1935-39 = 100) for the year 1959, slightly below the level of 145.1 for 1958. The 1959 estimate is almost identical with the five-year average (1954-58) of 143.7, but is well below the record high of 169.5 established in 1956. Although some production increases were recorded for such important items as grains, livestock and dairy products in 1959 over 1958, they were not large enough to completely offset the declines estimated for most of the other agricultural products.

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* Excludes Newfoundland.

A reduction in agricultural production was recorded for each of the provinces except Nova Scotia, Saskatchewan and Alberta. These declines in output ranged from less than 1 p.c. for Quebec to slightly more than 12 p.c. for Prince Edward Island. For those provinces in which farm production increased in 1959 over 1958, the gains in output ranged from 5 p.c. for Alberta to 7 p.c. for Nova Scotia and slightly more than 8 p.c. for Saskatchewan.

10.—Index Numbers of Physical Volume of Agricultural Production, by Province, 1950-59

(1935-39=100. Exclusive of Newfoundland)

NOTE.—For a description of this index, methods and coverage, see DBS *Quarterly Bulletin of Agricultural Statistics* (Catalogue No. 21-003) for April-June, 1952. Figures for 1935-44 are given in the 1950 Year Book, p. 420, and for 1945-49 in the 1956 edition, p. 423.

Year	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
1950	148.2	105.2	140.2	136.3	128.1	137.8	168.3	121.8	134.2	137.8
1951	119.5	87.7	110.4	139.0	128.6	146.4	218.1	157.1	126.9	154.7
1952	142.3	80.6	109.4	124.7	119.6	164.6	267.4	174.8	133.3	166.2
1953	142.8	80.6	121.6	132.9	129.5	131.3	237.5	158.6	136.3	157.9
1954	150.3	88.7	114.1	129.8	129.1	102.1	108.8	119.4	131.4	119.7
1955	150.0	93.3	135.9	143.8	129.6	127.3	210.8	141.2	131.2	150.4
1956	139.6	94.5	127.5	138.4	137.5	171.5	251.4	168.7	127.8	169.5
1957r	161.8	93.6	126.7	132.9	142.7	126.1	141.1	118.8	143.7	133.9
1958r	154.8	88.6	118.2	139.2	159.6	157.7	143.6	131.7	145.7	145.1
1959	135.7	94.7	112.2	138.7	145.4	148.4	155.4	138.2	143.3	143.6

Subsection 4.—Field Crops

Crop conditions across Canada are never universally good or bad because of the wide diversity of situations. The 1959 crop year was no exception, although the problems farmers encountered with the weather were sufficient to classify the year generally as a difficult one. Over much of the Prairie Provinces drought was a problem for the third successive year, but timely rains in late June helped the crops to maturity and an early harvest was in prospect. However, unseasonable snowstorms and wet weather interrupted operations and, as a result, some 56,000,000 bu. of wheat, 26,000,000 bu. each of oats and barley and 2,600,000 bu. of flaxseed were left in the fields over the winter to be harvested in the spring. Without a period of exceptionally good weather in November and part of December, the amount of grain remaining in the fields would have been much greater. During the fall months large quantities of grain were harvested in a tough or damp condition. Hail losses were light but insect outbreaks required extensive control measures.

In the Maritime Provinces, growing conditions were generally satisfactory but wet fall weather delayed maturity and hampered harvesting operations. Grain crops in Quebec, after making good progress in July, experienced drought conditions during much of August, only to have harvesting operations hindered by wet weather. Hot, dry, summer weather in Ontario reduced yields of early crops to below levels of a year earlier, but late crops like corn and soybeans matured well and yields were good. In British Columbia, growing conditions were generally favourable and production of most crops was above the 1958 level.

Marketings of the five major grains (wheat, oats, barley, rye and flaxseed) in the Prairie Provinces totalled 551,977,000 bu. in 1958-59 and 516,695,000 bu. in the 1959-60 crop year. These amounts were well below the record 1952-53 crop year when marketings reached 844,855,000 bu. and 13 p.c. lower than the ten-year (1948-49 to 1957-58) average of 595,490,000 bu. Combined exports of the same grains (including wheat flour, rolled oats and oatmeal, malt, and pot and pearl barley) amounted to 390,000,000 bu. in 1958-59 and 364,136,000 bu. in 1959-60. Exports during the period showed a decrease from the ten-year average of 404,660,000 bu.

After registering a decrease in 1958-59, supplies of the five principal grains declined again in 1959-60, with reduced carryover more than offsetting a relatively small increase in total production. Reflecting the combined effect of smaller available supplies and expanded disappearance, total carryover stocks at July 31, 1960 were lower than the 1959 level.

The gross value of production of principal field crops on Canadian farms in 1958, based on average prices received by farmers throughout the 1958-59 crop year, was estimated at $1,520,371,000. This amount was well below the record-breaking year of 1952 when the total reached $2,345,030,000. An estimate of the value of the 1959 crops, based on average prices received by farmers during the complete crop year, will be published in one of the regularly scheduled DBS crop reports and in the *Quarterly Bulletin of Agricultural Statistics* (Catologue No. 21–003).

11.—Acreages, Yields and Prices of Principal Field Crops 1953-59, with Average for 1945-49
(Exclusive of Newfoundland)

Crop and Year	Area	Yield per Acre	Production	Average Price	Total Value[1]	Crop and Year	Area	Yield per Acre	Production	Average Price	Total Value[1]
	'000 acres	bu.	'000 bu.	$ per bu.	$'000		'000 acres	bu.	'000 bu.	$ per bu.	$'000
Wheat—						**Mixed Grains—**					
Av. 1945-49..	24,558	14.8	362,774	1.62	587,412	Av. 1945-49.	1,226	35.9	44,046	0.84	36,988
1953.........	26,384	24.0	634,040	1.33	844,503	1953........	1,550	43.7	67,738	0.85	57,267
1954.........	25,539	13.0	331,981	1.24	411,781	1954........	1,670	38.1	63,649	0.84	53,216
1955.........	22,660	22.9	519,178	1.37	709,461	1955........	1,701	39.0	66,266	0.84	55,726
1956.........	22,781	25.2	573,040	1.25	714,053	1956........	1,560	42.7	66,618	0.84	56,008
1957.........	21,117	18.3	385,508	1.28	493,491	1957........	1,452	43.6	63,292	0.75	47,693
1958[r]........	20,899	17.8	371,730	1.32	492,198	1958[r].......	1,422	45.5	64,648	0.82	52,995
1959.........	23,065	17.9	413,520	1.11	457,111	1959........	1,500	42.5	63,790	0.77	49,331
Oats—						**Flaxseed—**					
Av. 1945-49..	11,513	28.4	326,437	0.67	219,370	Av. 1945-49.	1,164	8.2	9,502	3.91	37,188
1953.........	9,873	41.9	413,971	0.63	259,616	1953........	956	10.2	9,748	2.44	23,808
1954.........	10,052	30.5	306,401	0.67	206,537	1954........	1,178	9.3	10,998	2.54	27,963
1955.........	10,958	36.5	399,451	0.67	265,749	1955........	1,836	10.3	18,990	2.77	52,669
1956.........	11,707	44.8	524,517	0.57	300.234	1956........	3,041	11.5	34,991	2.56	89,631
1957[r]........	11,017	34.5	380,599	0.60	226,811	1957........	3,486	5.5	19,179	2.53	48,549
1958[r]........	11,039	36.3	400,951	0.63	252,584	1958[r].......	2,623	8.7	22,766	2.62	59,702
1959.........	11,391	36.7	417,933	0.56	233,850	1959........	2,151	8.2	17,719	3.17	56,101
								cwt.	'000 cwt.	$ per cwt.	
Barley—						**Potatoes—**					
Av. 1945-49..	6,569	21.5	141,171	0.95	133,431	Av. 1945-49.	417	95.3	39,704	1.83	72,522
1953.........	8,908	29.4	262,121	0.86	224,681	1953........	324	129.2	41,803	1.32	55,004
1954.........	7,842	22.3	175,196	0.89	155,278	1954........	304	105.7	32,163	2.42	77,951
1955.........	9,887	25.4	251,102	0.87	219,143	1955........	313	128.3	40,191	1.77	71,032
1956.........	8,390	32.1	269,065	0.79	211,336	1956........	312	135.4	42,325	1.75	74,274
1957[r]........	9,403	23.0	215,993	0.76	165,051	1957........	312	141.2	44,077	1.73	76,302
1958[r]........	9,548	25.6	244,764	0.77	187,491	1958[r].......	311	129.6	40,301	1.73	69,573
1959.........	8,289	27.2	225,550	0.72	163,237	1959........	294	124.2	36,532	2.29	83,613
								ton	'000 tons	$ per ton	
Rye—						**Tame Hay—**					
Av. 1945-49..	1,192	11.1	13,182	1.85	24,362	Av. 1945-49.	10,535	1.59	16,729	14.99	250,847
1953.........	1,505	19.2	28,845	0.82	23,609	1953........	10,564	1.89	20,015	13.75	275,211
1954.........	787	16.3	12,812	0.92	11,734	1954........	10,737	1.87	20,118	13.98	281,156
1955.........	746	18.6	13,840	0.92	12,775	1955........	10,842	1.86	20,186	15.05	303,837
1956.........	547	15.4	8,434	1.00	8,421	1956........	10,922	1.80	19,655	15.40	302,698
1957.........	551	15.5	8,539	0.88	7,537	1957........	11,452	1.68	19,188	15.38	295,177
1958[r]........	521	15.3	8,002	0.89	7,125	1958[r].......	11,477	1.57	18,029	15.67	282,558
1959.........	517	15.8	8,149	0.91	7,399	1959........	11,779	1.72	20,246	15.17	307,069

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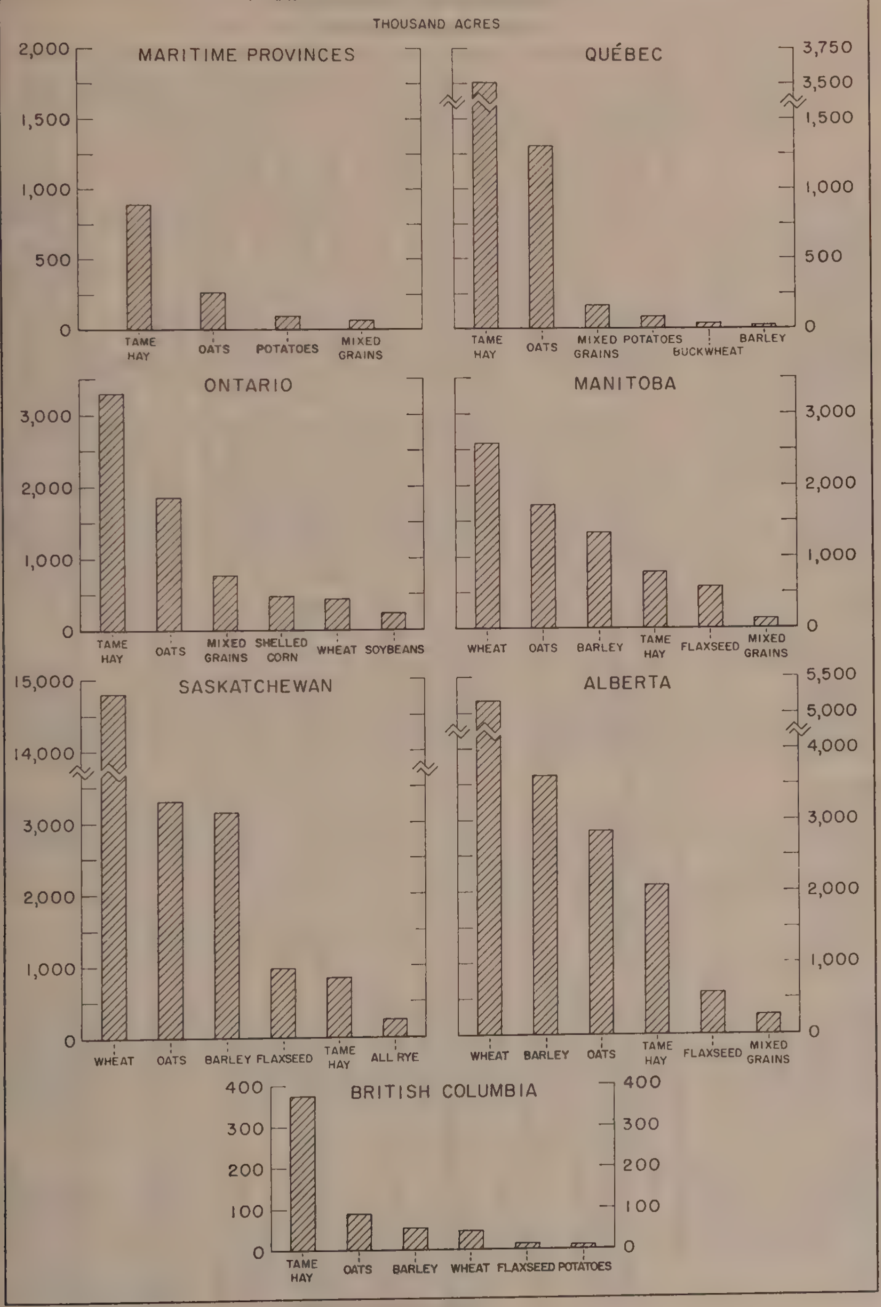
[1] Gross value of farm production; does not represent cash income from sales.

ACREAGES OF PRINCIPAL FIELD CROPS PRODUCED IN EACH PROVINCE OR REGION, 1959



12.—Acreages, Production and Values of Principal Field Crops, by Province, 1958 and 1959, with Average for 1945-49

(Exclusive of Newfoundland)

Field Crop and Province	Area			Total Production			Gross Farm Value		
	Average 1945-49	1958	1959	Average 1945-49	1958	1959	Average 1945-49	1958r	1959
	'000 acres	'000 acres	'000 acres	'000 bu.	'000 bu.	'000 bu.	$'000	$'000	$'000
Wheat	**24,558**	**20,899**	**23,065**	**362,774**	**371,730**	**413,520**	**587,412**	**492,198**	**457,111**
Prince Edward Island	2	3	4	54	92	94	84	150	154
Nova Scotia	1	1	1	23	20	15	34	32	25
New Brunswick	2	2	2	46	64	63	77	108	105
Quebec	12	13	12	206	295	316	313	475	496
Ontario—									
Winter	621	580	425	18,100	23,896	12,464	28,358	31,542	19,383
Spring	40	15	17	810	363	403	1,287	501	540
Manitoba	2,420	2,358	2,594	48,000	58,000	60,000	79,827	78,880	69,600
Saskatchewan	14,438	13,182	14,803	185,000	192,000	232,000	301,085	253,440	255,200
Alberta	6,915	4,704	5,160	108,000	96,000	107,000	171,983	125,760	110,210
British Columbia	106	41	47	2,615	1,000	1,165	4,365	1,310	1,398
Oats	**11,513**	**11,039**	**11,391**	**326,437**	**400,951**	**417,933**	**219,370**	**252,584**	**233,850**
Prince Edward Island	110	97	100	4,073	4,559	4,400	3,113	3,100	3,080
Nova Scotia	64	42	39	2,221	1,974	1,600	1,891	1,777	1,440
New Brunswick	178	122	125	6,136	5,368	4,625	4,799	4,187	3,515
Quebec	1,377	1,307	1,303	32,961	45,745	46,517	26,716	38,883	38,609
Ontario	1,503	1,799	1,853	56,770	99,305	93,391	42,078	70,507	61,638
Manitoba	1,460	1,711	1,729	49,000	60,000	61,000	31,402	33,600	29,280
Saskatchewan	4,084	3,064	3,303	96,000	83,000	94,000	60,134	44,820	43,240
Alberta	2,645	2,809	2,850	75,000	97,000	108,000	46,148	53,350	50,760
British Columbia	93	88	89	4,535	4,000	4,400	3,088	2,360	2,288
Barley	**6,569**	**9,548**	**8,289**	**141,171**	**244,764**	**225,556**	**133,431**	**187,491**	**163,237**
Prince Edward Island	6	1	1	169	30	28	172	31	27
Nova Scotia	6	2	1	153	53	43	172	59	47
New Brunswick	11	4	4	312	159	121	346	176	131
Quebec	84	23	21	1,869	727	654	2,006	814	732
Ontario	234	91	100	7,477	4,095	4,068	7,148	4,013	3,931
Manitoba	1,766	1,584	1,349	42,000	44,000	35,000	40,907	35,640	26,600
Saskatchewan	2,354	3,939	3,148	43,000	87,000	74,000	39,813	65,250	52,540
Alberta	2,088	3,846	3,610	45,000	107,000	110,000	42,121	80,250	78,100
British Columbia	21	58	55	731	1,700	1,636	746	1,258	1,129
Fall Rye	**863**	**410**	**406**	**9,882**	**6,792**	**6,819**	**18,272**	**6,112**	**6,233**
Quebec	4	10	8	59	217	165	77	258	191
Ontario	86	92	73	1,771	2,355	1,583	2,900	2,331	1,580
Manitoba	40	65	76	671	1,120	1,530	1,140	952	1,392
Saskatchewan	531	161	175	4,323	1,600	2,100	8,394	1,344	1,848
Alberta	201	81	73	3,029	1,470	1,400	5,710	1,205	1,190
British Columbia	2	1	1	29	30	41	50	22	32
Spring Rye	**329**	**112**	**111**	**3,299**	**1,210**	**1,330**	**6,090**	**1,013**	**1,166**
Manitoba	10	6	7	142	80	130	255	68	119
Saskatchewan	192	87	79	1,917	900	900	3,522	756	792
Alberta	127	18	25	1,240	230	300	2,314	189	255
All Rye	**1,192**	**521**	**517**	**13,182**	**8,002**	**8,149**	**24,362**	**7,125**	**7,399**
Quebec	4	10	8	59	217	165	77	258	191
Ontario	86	92	73	1,771	2,355	1,583	2,900	2,331	1,580
Manitoba	50	72	83	813	1,200	1,660	1,395	1,020	1,511
Saskatchewan	723	248	254	6,240	2,500	3,000	11,916	2,100	2,640
Alberta	328	100	98	4,269	1,700	1,700	8,024	1,394	1,445
British Columbia	2	1	1	29	30	41	50	22	32
Peas	**83**	**72**	**64**	**1,375**	**1,146**	**984**	**3,811**	**2,521**	**2,492**
Quebec	7	3	4	91	51	52	339	183	221
Ontario	26	7	7	468	133	137	1,337	319	338
Manitoba	21	50	40	366	700	480	916	1,400	1,200
Saskatchewan	7	3	3	109	41	30	294	90	60
Alberta	16	4	5	215	93	116	598	279	267
British Columbia	6	5	6	126	128	169	326	250	406
Beans	**82**	**67**	**68**	**1,356**	**1,225r**	**1,168**	**5,024**	**4,484**	**4,361**
Quebec	2	2	1	30	26	21	124	108	94
Ontario	80	66	67	1,326	1,199r	1,147	4,900	4,376	4,267

12.—Acreages, Production and Values of Principal Field Crops, by Province, 1958 and 1959, with Average for 1945-49—continued

Field Crop and Province	Area			Total Production			Gross Farm Value		
	Average 1945–49	1958	1959	Average 1945–49	1958	1959	Average 1945–49	1958ʳ	1959
	'000 acres	'000 acres	'000 acres	'000 bu.	'000 bu.	'000 bu.	$'000	$'000	$'000
Soybeans	**73**	**263**	**251**	**1,492**	**6,649**	**6,828**	**3,492**	**12,511**	**12,563**
Ontario	73	256	248	1,492	6,579	6,783	3,492	12,368	12,482
Manitoba	—	7	3	—	70	45	—	143	81
Buckwheat	**179**	**102**	**83**	**3,642**	**2,139**	**1,629**	**3,896**	**2,234**	**1,747**
New Brunswick	11	4	4	267	137	130	325	134	130
Quebec	56	36	29	1,116	896	691	1,279	1,030	774
Ontario	109	27	25	2,212	626	558	2,229	638	555
Manitoba	3	35	25	48	480	250	62	432	288
Mixed Grains	**1,226**	**1,422**	**1,500**	**44,046**	**61,648**	**63,790**	**36,988**	**52,995**	**49,331**
Prince Edward Island	48	50	50	1,878	2,450	2,280	1,590	2,082	1,778
Nova Scotia	4	10	11	139	464	447	135	469	456
New Brunswick	3	5	6	97	228	237	79	217	216
Quebec	189	181	168	4,921	6,480	6,014	4,852	6,998	6,315
Ontario	916	760	767	35,438	42,256	38,868	29,194	34,650	29,871
Manitoba	18	111	143	496	3,400	4,400	364	2,244	2,992
Saskatchewan	13	75	80	255	1,800	1,900	192	1,224	1,216
Alberta	33	225	272	736	7,400	9,500	512	4,958	6,365
British Columbia	2	4	3	86	170	144	70	153	122
Flaxseed	**1,164**	**2,623**	**2,151**	**9,502**	**22,766**	**17,719**	**37,188**	**59,702**	**56,101**
Ontario	39	11	9	463	156	108	1,879	407	313
Manitoba	449	550	575	4,267	4,700	4,600	16,732	12,314	14,352
Saskatchewan	526	1,496	975	3,360	11,300	6,300	12,872	29,606	19,971
Alberta	146	556	580	1,373	6,500	6,600	5,555	17,095	21,120
British Columbia	4	10	12	39	110	111	149	280	345
				'000 lb.	'000 lb.	'000 lb.			
Sunflower Seed	**29**	**49**	**42**	**16,312**	**22,125**	**37,000**	**952**	**1,145**	**1,210**
Manitoba	29	45	25	16,312	19,350	20,000	952	1,006	700
Alberta	—	4	17	—	2,775	17,000	—	139	510
Rapeseed	**40**	**626**	**214**	**29,663**	**388,100**	**178,000**	**1,746**	**9,753**	**7,120**
Manitoba	—	21	12	—	12,600	9,000	—	365	360
Saskatchewan	40	535	165	29,663	330,000	140,000	1,746	8,250	5,600
Alberta	—	70	36	—	45,500	29,000	—	1,138	1,160
Mustard Seed	—	**87**	**80**	—	**70,292**	**49,144**	—	**2,465**	**1,869**
Manitoba	—	[1]	[1]	—	292	144	—	15	7
Alberta	—	87	80	—	70,000	49,000	—	2,450	1,862
				'000 bu.	'000 bu.	'000 bu.			
Shelled Corn	**244**	**498**	**489**	**11,038**	**29,892**	**31,023**	**14,056**	**36,155**	**32,115**
Ontario	231	487	480	10,734	29,610	30,756	13,726	35,828	31,861
Manitoba	13	12	9	304	282	267	330	327	254
				'000 cwt.	'000 cwt.	'000 cwt.			
Potatoes	**417**	**311**	**294**	**39,704**	**40,301**	**36,532**	**72,522**	**69,573**	**83,613**
Prince Edward Island	46	46	42	5,993	8,120	6,413	7,746	10,556	13,724
Nova Scotia	16	10	10	1,767	1,339	1,144	3,436	2,477	3,260
New Brunswick	61	46	45	8,730	8,050	7,604	13,241	9,499	14,067
Quebec	118	91	82	8,956	9,377	8,168	17,485	18,566	20,012
Ontario	92	56	53	8,004	7,967	7,473	16,877	15,668	18,085
Manitoba	21	16	16	1,405	1,200	1,062	2,371	2,220	2,124
Saskatchewan	24	15	17	1,230	770	1,044	2,570	1,933	2,819
Alberta	23	19	19	1,679	1,580	1,520	3,706	3,397	3,420
British Columbia	16	12	11	1,940	1,898	2,104	5,089	5,257	6,102
				'000 tons	'000 tons	'000 tons			
Field Roots	**72**	**35**	**30**	**725**[2]	**401**	**337**	**12,845**	**8,024**	**6,514**
Prince Edward Island	8	6	5	119	81	72	1,906	1,458	1,224
Nova Scotia	6	3	3	72	51	40	1,732	918	720
New Brunswick	7	2	2	66	30	28	1,086	555	456
Quebec	14	8	7	114	63	50	2,712	1,575	1,150
Ontario	36	15	13	343	176	147	5,409	3,518	2,964

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[1] Less than 500 acres.

[2] Includes British Columbia.

12.—Acreages, Production and Values of Principal Field Crops, by Province, 1958 and 1959, with Average for 1945-49—concluded

Field Crop and Province	Area			Total Production			Gross Farm Value		
	Average 1945–49	1958	1959	Average 1945–49	1958	1959	Average 1945–49	1958r	1959
	'000 acres	'000 acres	'000 acres	'000 tons	'000 tons	'000 tons	$'000	$'000	$'000
Tame Hay	**10,535**	**11,477**	**11,779**	**16,729**	**18,029**	**20,246**	**250,847**	**282,558**	**307,069**
Prince Edward Island	221	212	206	333	403	324	4,620	5,038	4,212
Nova Scotia	403	311	308	699	684	633	11,773	10,260	9,495
New Brunswick	534	378	374	748	680	667	11,849	9,180	9,605
Quebec	3,959	3,464	3,508	5,526	5,716	5,999	87,681	91,456	91,485
Ontario	3,371	3,185	3,300	6,128	5,542	6,630	86,292	84,017	91,894
Manitoba	324	776	797	556	1,000	1,400	6,021	13,750	21,000
Saskatchewan	481	788	837	681	770	970	9,029	11,935	15,278
Alberta	940	1,996	2,075	1,370	2,500	2,800	19,053	41,875	46,200
British Columbia	302	367	374	688	734	823	14,530	15,047	17,900
Fodder Corn	**404**	**381**	**369**	**3,509**	**3,767**	**3,964**	**17,951**	**17,678**	**18,793**
Quebec	71	68	55	605	558	575	4,172	3,208	3,881
Ontario	308	285	280	2,790	3,061	3,184	12,910	13,315	13,421
Manitoba	16	24	28	58	110	146	422	825	1,022
Saskatchewan	5	2	3	14	4	7	137	58	105
British Columbia	4	2	3	42	34	52	309	272	364
Sugar Beets	**66**	**98**	**90**	**690**	**1,325**	**1,240**	**9,080**	**19,175**	**10,884**
Quebec	3	6	5	27	65	68	344	917	473
Ontario	22	32	33	219	463	505	2,950	5,824	4,699
Manitoba	11	22	18	90	196	192	1,113	3,230	1,439
Alberta	30	38	35	354	601	475	4,672	9,204	4,273

13.—Acreages and Production of Grain in the Prairie Provinces, 1953-59

Grain	1953	1954	1955	1956	1957	1958	1959
				ACREAGES			
	'000 acres	'000 acres	'000 acres	'000 acres	'000 acres	'000 acres	'000 acres
Wheat	25,517	24,707	21,964	22,064	20,446	20,244	22,557
Oats	6,490	6,715	7,788	8,658	7,805	7,584	7,882
Barley	8,599	7,568	9,638	8,181	9,209	9,369	8,107
Rye	1,421	687	665	452	455	419	435
Flaxseed	908	1,148	1,809	3,010	3,462	2,602	2,130
				PRODUCTION			
	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.
Wheat	604,000	305,000	497,000	551,000	364,000	346,000	399,000
Oats	276,000	196,000	290,000	400,000	234,000	240,000	263,000
Barley	251,000	167,000	244,000	262,000	209,000	238,000	219,000
Rye	26,900	10,790	12,300	6,350	6,300	5,400	6,360
Flaxseed	9,100	10,700	18,700	34,600	18,900	22,500	17,500

Stocks of Grain in Canada.—Table **14** shows the stocks of Canadian grain on hand in Canada and in the United States on July 31 for the years 1953-59, with averages for the five-year periods 1940-44 and 1945-49. Stocks in Canada are separated into those in commercial positions and those on farms. Stocks on farms and in country elevators in the Prairie Provinces are given separately.

14.—Carryover of Canadian Grain as at July 31, 1953-59, with Averages for 1940-44 and 1945-49

NOTE.—Figures for individual years before 1953 will be found in the corresponding table of previous editions of the Year Book.

As at July 31—	Total in Canada and United States	Total in Canada	In Commercial Storage in Canada	On Farms in Canada	Prairie Provinces	
					On Farms	In Country Elevators
	bu.	bu.	bu.	bu.	bu.	bu.
Wheat—						
Av. 1940–44	431,102,442	408,734,141	351,581,341	57,152,800	54,960,000	154,370,863
Av. 1945–49	119,587,196	115,603,876	82,718,676	32,885,200	31,265,600	24,698,778
1953	383,185,486	382,545,625	288,829,625	93,716,000	91,000,000	154,702,768
1954	618,675,202	618,567,923	386,707,923	231,860,000	228,000,000	211,475,266
1955	536,748,472	536,302,394	398,447,394	137,855,000	134,000,000	221,665,852
1956	579,573,811	578,802,924	374,597,924	204,205,000	202,000,000	234,727,789
1957	733,545,846	733,334,787	410,174,787	323,160,000	319,000,000	235,035,203
1958	639,453,741	639,453,741	407,553,741	231,900,000	229,000,000	236,245,229
1959	549,001,464	548,842,375	418,842,375	130,000,000	126,000,000	251,179,720
Oats—						
Av. 1940–44	74,984,299	74,212,213	16,435,613	57,776,600	43,826,600	6,500,924
Av. 1945–49	70,725,656	69,841,382	18,954,582	50,886,800	41,042,800	5,091,295
1953	144,409,075	143,525,521	52,865,521	90,660,000	78,500,000	38,504,134
1954	125,768,957	125,768,957	28,518,957	97,250,000	85,000,000	19,848,364
1955	83,967,243	83,967,243	30,567,243	53,400,000	40,000,000	16,516,871
1956	119,105,841	118,285,166	47,085,166	71,200,000	60,000,000	24,269,986
1957	226,215,327	226,110,796	54,010,796	172,100,000	155,000,000	41,063,069
1958	154,915,634	154,915,634	46,915,634	108,000,000	88,000,000	32,224,900
1959	118,978,700	118,978,700	38,978,700	80,000,000	53,000,000	27,371,518
Barley—						
Av. 1940–44	29,922,222	28,868,755	12,191,755	16,677,000	15,453,000	4,138,057
Av. 1945–49	29,747,854	29,512,098	12,702,098	16,810,000	16,140,000	3,842,261
1953	111,666,834	111,260,514	73,025,514	38,235,000	37,000,000	47,738,023
1954	145,910,370	145,910,370	49,100,370	96,810,000	95,000,000	31,750,779
1955	91,488,186	91,488,186	49,178,186	42,310,000	40,000,000	32,095,796
1956	110,947,935	110,947,935	60,482,935	50,465,000	49,000,000	33,152,220
1957	142,778,542	142,692,307	61,712,307	80,980,000	79,000,000	37,247,122
1958	118,165,290	117,636,296[r]	60,489,504	57,500,000	55,000,000	35,260,649
1959	128,153,215	128,153,215	71,153,215	57,000,000	54,000,000	49,887,844
Rye—						
Av. 1940–44	6,897,205	4,942,647	3,260,247	1,682,400	1,617,800	1,172,857
Av. 1945–49	3,273,777	3,123,572	2,023,372	1,100,200	1,053,400	544,436
1953	17,540,618	16,638,159	12,133,159	4,505,000	4,400,000	3,417,245
1954	22,235,477	22,235,477	6,425,477	15,810,000	15,650,000	3,616,842
1955	19,934,653	19,844,103	8,214,103	11,630,000	11,450,000	3,148,206
1956	15,713,037	15,639,314	6,134,314	9,505,000	9,400,000	3,392,699
1957	14,159,691	14,141,691	3,501,691	10,640,000	10,300,000	1,500,352
1958	10,061,953	9,997,471	3,967,471	6,030,000	5,200,000	1,723,029
1959	7,919,805	7,015,738	3,575,738	3,440,000	3,200,000	1,871,515
Flaxseed—						
Av. 1940–44	1,923,885	1,923,885	1,667,525	256,360	251,700	373,895
Av. 1945–49	3,888,325	3,888,325	3,423,525	464,800	461,400	240,711
1953	4,301,420	4,301,420	2,468,420	1,833,000	1,800,000	972,940
1954	3,489,712	3,489,712	1,547,712	1,942,000	1,900,000	441,588
1955	2,587,064	2,587,064	909,064	1,678,000	1,650,000	98,586
1956	2,997,471	2,997,471	2,067,471	930,000	930,000	239,523
1957	7,580,565	7,580,565	6,060,565	1,520,000	1,500,000	1,644,943
1958	5,652,016	5,652,016	4,722,016	930,000	900,000	1,010,769
1959	6,523,126	6,523,126	5,003,126	1,520,000	1,500,000	1,575,511

Subsection 5.—Livestock and Poultry

Livestock.—The numbers of livestock on farms in the different provinces for 1959 and 1960 are given in Table **15** and the average value per head of farm livestock is given, by province, in Table **16**.

15.—Livestock on Farms, by Province, as at June 1, 1959 and 1960

Province and Item	1959	1960
	No.	No.
Newfoundland	..	..
Prince Edward Island—		
Horses	10,600	9,100
Milk cows[1]	40,800	41,000
Other cattle	68,200	71,000
Sheep	34,000	34,000
Swine	63,000	48,000
Nova Scotia—		
Horses	14,000	12,100
Milk cows[1]	69,000	68,000
Other cattle	88,000	92,000
Sheep	78,000	73,000
Swine	51,000	52,000
New Brunswick—		
Horses	14,500	12,800
Milk cows[1]	75,000	72,000
Other cattle	86,000	86,000
Sheep	65,000	62,000
Swine	70,000	59,000
Quebec—		
Horses	138,000	129,000
Milk cows[1]	1,083,000	1,114,000
Other cattle	917,000	973,000
Sheep	290,000	266,000
Swine	1,290,000	1,043,000
Ontario—		
Horses	102,000[r]	95,000
Milk cows[1]	1,015,000	1,040,000
Other cattle	1,955,000	2,008,000
Sheep	402,000	385,000
Swine	2,200,000	1,880,000
Manitoba—		
Horses	60,000	56,000
Milk cows[1]	214,000	211,000
Other cattle	669,000	700,000
Sheep	78,000	84,000
Swine	505,000	380,000
Saskatchewan—		
Horses	132,000	120,000
Milk cows[1]	248,000	245,000
Other cattle	1,602,000	1,688,000
Sheep	187,000	217,000
Swine	845,000	585,000
Alberta—		
Horses	120,000	115,000
Milk cows[1]	272,000	277,000
Other cattle	2,298,000	2,388,000
Sheep	530,000	555,000
Swine	1,780,000	1,385,000
British Columbia—		
Horses	23,000	22,500
Milk cows[1]	91,000	94,000
Other cattle	329,000	333,000
Sheep	97,000	97,000
Swine	68,000	51,000
Yukon and N.W.T.	..	..
Totals—		
Horses	**614,100**[r]	**571,500**
Milk cows[1]	**3,107,800**	**3,162,000**
Other cattle	**8,012,200**	**8,339,000**
Sheep	**1,761,000**	**1,773,000**
Swine	**6,872,000**	**5,483,000**

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[1] Cows and heifers, two years old or over, kept for milk purposes.

16.—Average Value per Head of Farm Livestock, by Province, 1959 and 1960

(Exclusive of Newfoundland and the Yukon and Northwest Territories)

Province and Item	1959	1960
	$	$
Prince Edward Island—		
Horses	109	124
All cattle	120	118
Milk cows[1]	176	180
Other cattle	86	81
Sheep	14	15
Swine	25	25
Nova Scotia—		
Horses	135	142
All cattle	122	122
Milk cows[1]	169	172
Other cattle	85	85
Sheep	15	14
Swine	28	25
New Brunswick—		
Horses	151	163
All cattle	117	114
Milk cows[1]	163	160
Other cattle	76	76
Sheep	15	15
Swine	28	26
Quebec—		
Horses	178	199
All cattle	128	129
Milk cows[1]	173	176
Other cattle	76	76
Sheep	14	13
Swine	27	25
Ontario—		
Horses	142	158
All cattle	164	158
Milk cows[1]	233	230
Other cattle	128	121
Sheep	19	19
Swine	29	28
Manitoba—		
Horses	106	109
All cattle	144	135
Milk cows[1]	202	195
Other cattle	126	117
Sheep	16	14
Swine	24	23

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[1] Cows and heifers, two years old or over, kept for milk purposes.

16.—Average Value per Head of Farm Livestock, by Province, 1959 and 1960—concluded

Province and Item	1959	1960	Province and Item	1959	1960
	$	$		$	$
Saskatchewan—			**British Columbia—**		
Horses	88	92	Horses	107	112
All cattle	140	129	All cattle	144	134
Milk cows[1]	202	190	Milk cows[1]	212	203
Other cattle	131	121	Other cattle	125	114
Sheep	15	14	Sheep	18	18
Swine	23	21	Swine	28	25
Alberta—			**Totals—**		
Horses	93	99	**Horses**	**124**	**134**
All cattle	140	129	**All cattle**	**144**	**137**
Milk cows[1]	211	201	**Milk cows[1]**	**201**	**199**
Other cattle	131	121	**Other cattle**	**122**	**114**
Sheep	16	15	**Sheep**	**16**	**16**
Swine	24	22	**Swine**	**26**	**25**

[1] Cows and heifers, two years old or over, kept for milk purposes.

The federal Department of Agriculture inspects all livestock in plants designated as inspected establishments under the Meat and Canned Foods Act. A record is kept of these inspections and figures from 1946 are given in Table 17. Local wholesale butcherings and slaughterings carried out by retail butchers and by farmers for their own use are not included. Actually, the slaughtering and meat packing industry is concentrated in a comparatively small number of large establishments to facilitate greater efficiency and utilization of products; thus the figures of Table 17 are fairly inclusive. The slaughtering and meat packing industry is dealt with in its proper relation to all other manufacturing enterprises in Chapter XIV of this volume. On a gross value basis it normally ranks among the three largest manufacturing industries in Canada but it owes its importance to the value of raw products obtained from the farmer and the rancher rather than to the value added by the manufacturing process.

17.—Livestock Slaughtered at Inspected Establishments 1946-59, and by Month 1959

(Exclusive of Newfoundland)

Year	Cattle	Calves	Sheep	Hogs	Year and Month	Cattle	Calves	Sheep	Hogs
	No.	No.	No.	No.		No.	No.	No.	No.
					1959				
1946	1,668,441	752,343	1,213,235	4,252,591	January	138,201	33,644	31,745	645,879
1947	1,291,759	665,311	900,766	4,452,816	February	116,203	33,247	26,860	618,091
1948	1,489,883	787,410	768,943	4,487,649	March	146,936	72,576	31,296	841,978
1949	1,439,489	766,277	629,673	4,098,609	April	133,795	91,795	15,429	688,356
1950	1,284,683	773,205	521,089	4,405,055	May	133,462	78,483	18,364	615,019
1951	1,149,789	583,718	438,518	4,488,007	June	160,441	70,129	25,114	706,590
1952	1,237,630	567,760	512,966	6,234,145	July	137,347	47,959	32,319	538,778
1953	1,469,406	740,723	543,371	4,611,312	August	142,762	47,169	48,751	531,159
1954	1,635,008	820,506	562,555	4,679,214	September	186,210	61,432	101,504	811,973
1955	1,702,108	828,658	591,566	5,543,787	October	150,097	50,102	102,486	590,721
1956	1,874,363	891,615	599,974	5,548,289	November	155,753	50,156	90,808	648,589
1957	1,986,251	887,102	581,903	4,971,477	December	142,978	39,879	45,070	783,633
1958	1,889,280	784,767	548,976	5,963,928					
1959	1,744,185	676,571	569,746	8,020,766	**Totals, 1959**	**1,744,185**	**676,571**	**569,746**	**8,020,766**

Poultry.—Poultry on farms and their values are given in Table **18**; production and consumption of poultry meat are included in Table **19.**

18.—Numbers and Values of Poultry on Farms, by Province, as at June 1, 1958-60

Province and Year	Hens and Chickens		Turkeys		Geese		Ducks		Totals	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
	'000	$'000	'000	$'000	'000	$'000	'000	$'000	'000	$'000
Newfoundland[1]......1956	106	264	2	14	..	1	..	2	109	281
P. E. Island........1958	745	759	12	41	9	21	6	9	772	830
1959	740	757	15	43	9	22	7	10	771	832
1960	670	655	20	59	7	10	8	20	705	744
Nova Scotia........1958	1,960	2,555	75	197	2	6	1	2	2,038	2,760
1959	2,190	2,784	32	95	2	6	1	1	2,225	2,886
1960	2,250	2,674	19	58	2	3	1	3	2,272	2,738
New Brunswick.....1958	1,125	1,352	55	213	4	13	2	3	1,186	1,581
1959	1,090	1,345	35	113	4	11	2	3	1,131	1,472
1960	1,075	1,318	18	59	3	5	2	6	1,098	1,388
Quebec.............1958	11,310	12,804	670	2,054	12	32	46	81	12,038	14,971
1959	10,500	11,546	750	2,082	10	28	53	98	11,313	13,754
1960	10,260	10,461	630	1,796	9	17	52	147	10,951	12,421
Ontario.............1958	31,165	31,435	1,950	5,518	110	301	130	166	33,355	37,420
1959	29,500	28,427	2,660	6,863	110	285	130	156	32,400	35,731
1960	27,600	26,220	2,200	5,676	109	131	130	337	30,039	32,364
Manitoba...........1958	6,980	5,433	950	1,939	42	82	44	43	8,016	7,497
1959	7,000	5,063	1,250	2,682	42	82	36	37	8,328	7,864
1960	6,400	4,458	915	2,031	40	41	35	68	7,390	6,598
Saskatchewan.......1958	8,300	5,905	1,145	2,515	50	116	70	77	9,565	8,613
1959	8,000	5,465	1,320	2,840	45	100	60	65	9,425	8,470
1960	6,980	4,463	1,000	2,200	40	42	58	126	8,078	6,831
Alberta.............1958	9,800	7,558	975	2,341	78	172	90	103	10,943	10,174
1959	9,690	6,997	1,050	2,520	75	167	85	95	10,900	9,779
1960	8,820	6,038	975	2,389	74	81	70	154	9,939	8,662
British Columbia...1958	4,345	5,089	325	1,042	11	31	30	43	4,711	6,205
1959	4,800	5,466	450	1,393	11	36	31	42	5,292	6,937
1960	4,740	5,038	400	1,272	12	16	25	81	5,177	6,407
Totals..........**1958**	**75,730**	**72,890**	**6,157**	**15,860**	**318**	**774**	**419**	**527**	**82,624**	**90,051**
1959	**73,510**	**67,850**	**7,562**	**18,631**	**308**	**737**	**405**	**507**	**81,785**	**87,725**
1960	**68,795**	**61,325**	**6,177**	**15,540**	**296**	**346**	**381**	**942**	**75,649**	**78,153**

[1] Census data; annual estimates are not available.

19.—Production and Domestic Disappearance of Poultry Meat, 1959

(Eviscerated weight)

Item	Net Production	Total Supply	Domestic Disappearance	Per Capita Consumption
	'000 lb.	'000 lb.	'000 lb.	lb.
Fowl and chickens....................................	365,198	397,196	383,765	22.0
Turkeys....................................	130,614	149,095	137,222	7.9
Geese....................................	3,170	3,394	3,265	0.2
Ducks....................................	3,781	5,534	5,380	0.3
Totals....................................	**502,763**	**555,219**	**529,632**	**30.4**

Subsection 6.—Dairying

Milk Production.—Milk production in 1960 amounted to 18,433,320,000 lb., an increase of 246,583,000 lb. over production in the previous year. The proportion of the total milk production used for factory-made dairy products was 58.0 p.c., the same as in 1959, and the proportion sold in fluid form 31.1 p.c. compared with 30.9 p.c. Milk used for all purposes on farms (home consumed, manufactured and fed) was 10.9 p.c. in 1960 compared with 11.1 p.c. in 1959.

20.—Production and Utilization of Milk, by Province, 1958-60

Province and Year	Milk Used in Manufacture		Milk Otherwise Used			Total Milk Production
	On Farms	In Factories	Fluid Sales	Farm-Home Consumed	Fed on Farms	
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Newfoundland	..	..	..	..	..	..
Prince Edward Island 1958	3,814	167,712	26,212	23,840	12,985	234,563
1959	2,714	174,120	26,850	22,460	13,486	239,630
1960	2,200	159,993	27,339	22,550	13,273	225,355
Nova Scotia 1958	15,327	147,779	182,392	47,460	16,680	409,638
1959^{r}	15,023	144,447	187,514	47,570	18,900	413,454
1960	12,987	124,179	194,244	47,490	19,240	398,140
New Brunswick 1958	25,483	218,607	151,827	41,550	20,634	458,101
1959^{r}	18,767	208,783	156,260	41,700	22,960	448,470
1960	19,141	195,549	157,370	40,570	27,180	439,810
Quebec 1958	30,069	3,892,023	1,666,584	283,900	198,770	6,071,346
1959^{r}	27,729	3,824,899	1,682,475	271,100	211,320	6,017,523
1960	23,728	3,917,818	1,722,536	287,100	219,130	6,170,312
Ontario 1958	17,878	3,512,703	2,041,680	227,600	214,200	6,014,061
1959^{r}	17,737	3,614,801	2,111,370	230,300	234,800	6,209,008
1960	15,070	3,634,745	2,125,089	222,800	225,900	6,223,004
Manitoba 1958	36,410	664,855	305,998	100,190	52,770	1,160,223
1959^{r}	34,094	639,908	311,539	101,460	52,520	1,139,521
1960	29,718	625,044	321,845	95,800	54,720	1,127,127
Saskatchewan 1958	76,729	727,523	312,470	179,200	59,230	1,355,152
1959^{r}	63,484	710,899	323,322	176,100	63,740	1,337,545
1960	57,587	698,002	338,730	177,300	65,490	1,337,109
Alberta 1958	61,846	924,417	348,403	151,400	59,090	1,545,156
1959^{r}	57,283	925,322	360,493	141,700	56,210	1,541,008
1960	52,556	1,014,312	365,401	146,400	57,110	1,635,779
British Columbia 1958	8,026	283,015	455,862	32,360	26,380	805,643
1959^{r}	9,618	308,830	462,040	31,820	28,270	840,578
1960	9,734	327,889	475,261	32,530	30,670	876,084
Totals 1958	**275,582**	**10,538,634**	**5,491,428**	**1,087,500**	**660,739**	**18,053,883**
1959^{r}	**246,449**	**10,552,009**	**5,621,863**	**1,064,210**	**702,206**	**18,186,737**
1960	**222,721**	**10,697,531**	**5,727,815**	**1,072,540**	**712,713**	**18,433,320**

21.—Farm Values of Milk Production, by Province, 1958-60

Province and Year		Value of Milk Used in Manufacture		Value of Milk Otherwise Used			Value of Total Milk Production
		On Farms	In Factories	Fluid Sales	Farm-Home Consumed	Fed on Farms	
		$'000	$'000	$'000	$'000	$'000	$'000
Newfoundland		..	..	..	..	..	..
Prince Edward Island	1958	104	3,889	1,016	641	843	6,493
	1959	74	4,138	1,054	615	866	6,747
	1960	59	3,798	1,068	613	806	6,344
Nova Scotia	1958	393	3,507	8,501	1,381	929	14,711
	1959r	385	3,509	8,963	1,408	976	15,241
	1960	333	3,063	9,258	1,420	911	14,985
New Brunswick	1958	697	5,053	6,861	1,209	1,374	15,194
	1959r	505	4,862	7,084	1,213	1,367	15,031
	1960	515	4,579	7,262	1,185	1,429	14,970
Quebec	1958	797	97,086	69,916	8,318	13,702	189,819
	1959r	747	99,479	70,721	8,540	15,652	195,139
	1960	639	100,135	72,526	8,900	15,842	198,042
Ontario	1958	481	83,142	88,251	6,122	10,463	188,459
	1959r	478	93,149	91,859	6,886	12,423	204,795
	1960	406	90,121	94,360	6,595	11,604	203,086
Manitoba	1958	934	14,603	12,037	2,545	3,669	33,788
	1959r	903	14,169	12,205	2,597	3,581	33,455
	1960	787	13,968	12,723	2,443	3,534	33,455
Saskatchewan	1958	1,902	16,502	12,643	4,623	3,939	39,609
	1959r	1,628	16,238	13,577	4,561	3,952	39,956
	1960	1,477	15,931	14,173	4,663	4,274	40,518
Alberta	1958	1,559	21,932	15,111	3,967	4,231	46,800
	1959r	1,469	21,976	15,575	3,727	4,139	46,886
	1960	1,348	24,008	15,810	3,836	4,334	49,336
British Columbia	1958	202	10,269	24,740	922	834	36,967
	1959r	238	8,932	26,326	999	991	37,486
	1960	241	8,692	27,061	1,012	1,080	38,086
Totals	**1958**	**7,069**	**255,983**	**239,076**	**29,728**	**39,984**	**571,840**
	1959r	**6,427**	**266,452**	**247,364**	**30,546**	**43,947**	**594,736**
	1960	**5,805**	**264,295**	**254,241**	**30,667**	**43,814**	**598,822**

Butter, Cheese and Other Dairy Products.—Butter production in 1960 amounted to 332,360,000 lb., 6,472,000 lb. fewer than in 1959. The total included 319,877,000 lb. of creamery butter, 9,518,000 lb. of dairy or farm-made butter and 2,965,000 lb. of whey butter.

The 1960 factory cheese production was estimated at 121,291,000 lb., an increase of 1.8 p.c. over the 1959 estimate but 41.5 p.c. below the peak production of 207,431,000 lb. in 1942. Exports of cheese, mostly cheddar, amounted to 18,780,000 lb. in 1960 and 20,009,000 lb. in 1959 as compared with 135,409,000 lb. in 1945.

The over-all production of concentrated milk products in 1960 amounted to 613,467,000 lb., 30,223,000 lb. more than in 1959, while the production of ice cream mix continued its upward trend, reaching over 20,400,000 gal.

22.—Production of Butter and Cheese, by Province, 1958-60

Province and Year		Butter				Cheese
		Creamery	Dairy	Whey	Total	Factory[1]
		'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Newfoundland		..	..	..	..	..
Prince Edward Island	1958	6,053	163	14	6,230	812
	1959	5,859	116	19	5,994	1,190
	1960	5,237	94	18	5,349	1,008
Nova Scotia	1958	4,856	655	—	5.511	—
	1959^r	4,490	642	—	5,132	—
	1960	3,613	555	—	4,168	—
New Brunswick	1958	8,314	1,089	—	9,403	830
	1959	7,831	802	—	8.633	767
	1960	7,238	818	—	8,056	705
Quebec	1958	133,542	1,285	262	135,089	27,280
	1959^r	127,127	1,185	273	128.585	37,597
	1960	123,731	1,014	291	125,036	41,388
Ontario	1958	89,452	764	1,857	92,073	69,337
	1959^r	87,381	758	2,425	90,564	76,376
	1960	84,942	644	2,649	88,235	74,400
Manitoba	1958	26,657	1,556	—	28,213	693
	1959^r	25,630	1,457	—	27,087	385
	1960	24,778	1,270	—	26,048	487
Saskatchewan	1958	29.509	3,279	—	32,788	46
	1959^r	28,671	2,713	—	31,384	190
	1960	28,012	2,461	—	30,473	292
Alberta	1958	34,327	2,643	4	36,974	1,635
	1959^r	34,322	2,448	5	36,775	1,577
	1960	37,336	2,246	7	39,589	1,750
British Columbia	1958	3.280	343	—	3,623	791
	1959^r	4,267	411	—	4,678	705
	1960	4,990	416	—	5,406	954
Totals	**1958**	**335,990**	**11,777**	**2,137**	**349,904**	**101,727**
	1959^r	**325,578**	**10,532**	**2,722**	**338,832**	**119,120**
	1960	**319,877**	**9,518**	**2,965**	**332,360**	**121,291**

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[1] Factory-made cheese includes cheddar and other cheese made from whole milk and cream. Amounts for "other cheese" are included in Quebec and Ontario figures but, as fewer than three firms reported in the other provinces, data cannot be included except in the Canada total.

23.—Production of Concentrated Milk Products, 1956-60

(Exclusive of Newfoundland)

Product	1956	1957	1958	1959^r	1960
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Concentrated Whole Milk Products	**365,934**	**380,107**	**361,884**	**362,984**	**404,325**
Condensed milk	17,172	14,730	14,194	14,553	14,420
Evaporated milk	305,152	316,824	305,267	302,697	316,950
Whole milk powder	20,544	23.088	19,713	20,872	45,829
Partly skimmed evaporated milk	20,312	21,888	21,119	21,163	20,178
Other whole milk products[1]	2,754	3,577	1,591	3,699	6,948
Concentrated Milk By-products	**119,722**	**159,951**	**224,433**	**220,260**	**209,142**
Condensed skim milk	4,233	3,476	3,444	3.814	2,591
Evaporated skim milk	8,776	9,184	10,028	7,662	8,640
Skim milk powder	79,005	120,710	185,625	176,437	166,819
Powdered buttermilk	7,691	8,100	8,028	7,740	8,179
Whey powder	10,986	13,037	12,820	16,599	11,037
Casein	7,828	4,896	3,430	4,924	8,000
Other milk by-products[2]	1,203	548	1,058	3.084	3,876
Totals	**485,656**	**540,058**	**586,317**	**583,244**	**613,467**

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[1] Includes malted milk, cream powder, formula milks, whole milk powder of less than 26 p.c. fat, evaporated milk of 2 p.c. fat, multi-milk and sterilized cream manufactured by fewer than three firms.

[2] Includes sugar of milk (lactose), condensed buttermilk, multi-skim milk and special formula skim milk products manufactured by fewer than three firms.

24.—Production of Ice Cream Mix,[1] by Province, 1957-60

Province	1957	1958	1959	1960
	'000 gal.	'000 gal.	'000 gal.	'000 gal.
Newfoundland	..	..	..	..
P. E. Island	89	97	115	126
Nova Scotia	727	730	816	876
New Brunswick	439	437	501	540
Quebec	4,352	4,518	5,064	5,022
Ontario	6,644	6,809	7,658	7,677
Manitoba	845	876	944	1,063
Saskatchewan	1,006	1,060	1,104	1,139
Alberta	1,516	1,637	1,669	1,862
British Columbia	1,939	2,118	2,138	2,175
Totals	**17,557**	**18,282**	**20,009**	**20,480**

[1] In previous years, ice cream mix data were doubled and published as ice cream.

Domestic Disappearance of Dairy Products.—The estimated consumption of fluid milk and cream, on a milk basis, amounted to 5,271,588,000 pt. in 1960, which amount was 88,586,000 pt. higher than the 1959 consumption. The daily average consumption per capita was 0.83 pt. compared to 0.84 pt. in 1959. The estimated consumption of milk and cream is given by province in Table **25** and the domestic disappearance of all dairy products in Table **26**.

25.—Estimated Consumption of Milk and Cream (expressed as Milk), by Province, 1958-60

Province and Year	Estimated Consumption	Daily per Capita Consumption
	'000 pt.	pt.
Newfoundland	..	..
Prince Edward Island 1958	38,800	1.06
1959	38,225	1.03
1960	38,674	1.03
Nova Scotia 1958	178,180	0.69
1959	182,236[r]	0.70
1960	187,391	0.71
New Brunswick 1958	149,904	0.71
1959	153,458	0.71[r]
1960	153,442	0.70
Quebec 1958	1,512,003	0.85
1959	1,514,399[r]	0.83
1960	1,557,856	0.83
Ontario 1958	1,759,132	0.83
1959	1,815,248[r]	0.84[r]
1960	1,820,067	0.82
Manitoba 1958	314,875	0.99
1959	320,154	0.99
1960	323,755	0.98
Saskatchewan 1958	381,140	1.17
1959	387,149[r]	1.17
1960	400,023	1.20
Alberta 1958	387,444	0.88
1959	389,297	0.86
1960	396,744	0.84
British Columbia 1958	378,466	0.68
1959	382,836	0.67
1960	393,636	0.67
Totals 1958	**5,099,944**	**0.84**
1959	**5,183,002[r]**	**0.84**
1960	**5,271,588**	**0.83**

26.—Domestic Disappearance of Dairy Products, 1958-60

Product	1958		1959[r]		1960	
	Total	Per Capita[1]	Total	Per Capita[1]	Total	Per Capita[1]
	'000 lb.	lb.	'000 lb.	lb.	'000 lb.	lb.
Milk and Cream	**6,578,928**	**396.08**	**6,686,073**	**393.46**	**6,800,355**	**391.84**
Milk	5,578,167	335.83	5,654,739	332.77	5,741,768	330.84
Cream as milk	1,000,761	60.25	1,031,334	60.69	1,058,587	61.00
Cream as product	201,786	12.15	203,691	11.99	208,095	11.99
Butter	**326,166**	**19.13**	**316,210**	**18.13**	**300,279**	**16.85**
Creamery	312,255	18.32	303,059	17.38	287,783	16.15
Dairy	11,777	0.69	10,532	0.60	9,518	0.53
Whey	2,134	0.12	2,619	0.15	2,978	0.17

For footnote, see end of table.

26.—Domestic Disappearance of Dairy Products, 1958-60—concluded

Product	1958		1959ʳ		1960	
	Total	Per Capita[1]	Total	Per Capita[1]	Total	Per Capita[1]
	'000 lb.	lb.	'000 lb.	lb.	'000 lb.	lb.
Cheese	**116,991ʳ**	**6.86ʳ**	**122,000**	**7.00**	**129,911**	**7.29**
Cheddar	47,162	2.77	47,395	2.72	50,811	2.85
Process	50,214ʳ	2.94ʳ	52,016	2.98	55,179	3.10
Other	19,615ʳ	1.15ʳ	22,589	1.30	23,921	1.34
Concentrated Whole Milk Products[2]	**343,380**	**20.13**	**343,697**	**19.71**	**363,895**	**20.42**
Evaporated	302,212	17.73	300,851	17.25	312,831	17.56
Condensed	14,562	0.85	14,437	0.83	14,253	0.80
Powdered	3,320	0.19	3,879	0.22	9,246	0.52
Concentrated Milk By-products[3]	**151,446**	**8.88**	**163,669**	**9.38**	**157,680**	**8.85**
Evaporated	9,956	0.58	7,658	0.44	8,648	0.49
Condensed	3,432	0.20	3,789	0.22	2,551	0.14
Powdered	109,673	6.43	121,302	6.95	116,705	6.55
All Dairy Products in Terms of Milk—						
Butter	**7,582,349**	**444.76**	**7,338,030**	**420.71**	**6,956,843**	**390.53**
Cheese	**1,129,301**	**66.24**	**1,174,112**	**67.32**	**1,252,160**	**70.29**
Concentrated	**787,745**	**46.20**	**790,328**	**45.31**	**867,703**	**48.71**
Grand Totals[4]	**16,699,945**	**989.74**	**16,668,832**	**965.80**	**16,573,381**	**940.46**

[1] Includes Newfoundland for all manufactured dairy products. [2] Includes, in addition to the items listed, malted milk, cream powder, partly skimmed evaporated milk, whole milk powder of less than 26 p.c. fat, formula milks, evaporated milk of 2 p.c. fat, multi-milk and sterilized cream. [3] Includes milk by-products items not listed, i.e., condensed buttermilk, powdered buttermilk, sugar of milk, casein, powdered whey, special formula skim milk products and multi-skim milk. Since the quantities used for human consumption and livestock feeding cannot be separated, per capita figures include both. [4] Includes ice cream mix in terms of milk.

Subsection 7.—Fruits and Vegetables

Fruits.—Commercial fruit growing in Canada is confined almost exclusively to rather limited areas in the Provinces of Nova Scotia, New Brunswick, Quebec, Ontario and British Columbia. Nova Scotia production is centred mainly in the Annapolis Valley and New Brunswick production in the St. John River Valley and Westmorland County. The fruit growing districts of Quebec are the Montreal area, the North Shore area, the Eastern Townships and the Quebec City district. Ontario fruit is grown in all the counties adjacent to the St. Lawrence River and the Great Lakes as far west as Georgian Bay, the Niagara district being the most productive. In British Columbia the four well-defined fruit areas are the Okanagan Valley, the Fraser Valley, the Kootenay and Arrow Lakes district and Vancouver Island. The climate elsewhere in Canada is not generally suitable for commercial tree-fruit culture. In most producing areas, particularly in the Annapolis Valley of Nova Scotia, the Niagara Peninsula of Ontario and the Okanagan Valley of British Columbia, fruit growing is either the principal or one of the most important forms of agriculture and is of paramount importance to the economy of those areas. Apples and small fruits are produced commercially in the provinces named but tender tree fruits and commercial vineyards are limited largely to Ontario and British Columbia.

Strawberries are grown commercially in all provinces for which tree-fruit statistics are prepared, as well as in Prince Edward Island. However, this crop is produced over a somewhat wider area than are tree fruits. In Nova Scotia, for example, considerable quantities of strawberries are grown in Colchester County and farther north, as well as in the apple producing areas of the Annapolis Valley. In British Columbia most of the strawberries are grown in the Fraser Valley rather than in the predominantly tree-fruit producing area of the Okanagan Valley.

Raspberries are grown commercially in Nova Scotia, New Brunswick and Quebec but the bulk of the crop is produced in Ontario and British Columbia. The Fraser Valley of British Columbia is the most important producing area.

Wild blueberries are harvested on a commercial scale in Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick and Quebec. This crop is indigenous to certain lands in these areas. Individuals who harvest the wild berries may undertake to burn the land from time to time for weed control and to effect pruning, dusting is often carried out to control insects, and bees are sometimes introduced to achieve better pollination. A large percentage of the crop is frozen and exported. Some blueberries are picked for sale in other provinces but no statistics of this trade are available. There is also some production of cultivated blueberries, particularly in British Columbia.

A marketing system has been developed for distributing fresh fruit from the specialized production areas to all parts of the country and a large proportion of the deciduous fruit consumed in Canada is grown domestically. Considerable quantities of apples, strawberries and blueberries are exported annually.

Canning and processing industries have developed in the fruit growing districts and, although the importance of the processing market varies with different fruits, it provides a valuable outlet for substantial proportions of most Canadian-grown fruit crops.

27.—Estimated Commercial Production and Farm Value of Fruit, 1957-59

Kind of Fruit and Year	Quantity	Weight	Farm Value	Average Farm Price per Unit of Quantity[1]
	'000 bu.	'000 lb.	$'000	$
Apples—				
1957	15,630	703,350	18,035	1.15
1958	17,006	765,270	14,729	0.87
1959	15,517	698,265	17,294	1.11
Pears—				
1957	1,094	54,700	2,201	2.01
1958	1,521	76,050	2,986	1.96
1959	1,276	63,800	2,355	1.85
Plums and Prunes—				
1957	566	28,300	946	1.67
1958	648	32,400	1,194	1.84
1959	620	31,000	1,020	1.65
Peaches—				
1957	2,801	140,050	6,218	2.22
1958	3,043	152,150	5,761[r]	1.89[r]
1959	2,645	132,250	5,444	2.06
Apricots—				
1957	281	14,050	523	1.86
1958	231	11,550	443	1.92
1959	181	9,050	464	2.56
Cherries (sweet)—				
1957	239	11,950	1,739	7.28
1958	297	14,850	1,799	6.06
1959	246	12,300	1,708	6.94
Cherries (sour)—				
1957	366	18,300	1,867	5.10
1958	460	23,000	1,937	4.21
1959	241	12,050	815	3.38
	'000 qt.			
Strawberries—				
1957	16,459	21,814	3,675	0.22
1958	23,926[r]	31,600[r]	5,264[r]	0.22
1959	21,405	28,308	4,711	0.22
Raspberries—				
1957	12,311	17,701	3,008	0.24
1958	11,865[r]	16,732[r]	2,655[r]	0.22
1959	11,215	15,963	2,781	0.25
	'000 lb.			
Loganberries—				
1957	1,059	1,059	161	0.15
1958	893	893	134	0.15
1959	1,217	1,217	184	0.15
Grapes—				
1957	69,319	69,319	2,832	0.04
1958	106,222	106,222	4,867	0.05
1959	84,378	84,378	4,034	0.05
Blueberries—				
1957	13,756	13,756	1,888	0.14
1958	16,283	16,283	2,365	0.15
1959	23,008	23,008	2,710	0.12

[1] Price to growers (to pickers in the case of blueberries) for unpacked fruit.

28.—Quantity and Value of Commercial Fruit Produced, by Province, 1957-59

Province	Quantity			Value[1]		
	1957	1958ʳ	1959	1957	1958ʳ	1959
	'000 lb.	'000 lb.	'000 lb.	$'000	$'000	$'000
Newfoundland	991	1,644	1,500	99	115	105
Prince Edward Island	1,506	1,868	1,412	239	303	221
Nova Scotia	138,279	72,565	110,455	2,711	1,816	2,404
New Brunswick	24,481	19,575	26,812	1,127	1,026	1,124
Quebec	121,100	217,310	198,986	4,995	6,475	6,924
Ontario	399,248	553,994	483,976	18,430	21,111	19,189
British Columbia	408,744	380,046	288,442	15,492	13,288	13,553
Totals	**1,094,349**	**1,247,002**	**1,111,583**	**43,093**	**44,134**	**43,520**

[1] Farm value (to pickers in the case of blueberries) for unpacked fruit.

Vegetables.—Estimates of acreage and production of commercial vegetables in Canada are prepared for all provinces except Newfoundland, Prince Edward Island and Saskatchewan. The Province of Ontario is the largest producer, followed by Quebec and British Columbia. A wide variety of crops is grown in these three provinces while a somewhat smaller range of crops is produced in the Maritimes and in the Prairie Provinces.

Canning, freezing and processing of vegetables are carried on in the important producing areas. The estimates in the following tables cover output of commercial growers only and do not include any acreages or production of vegetables grown for home use on farms or elsewhere.

29.—Estimated Commercial Acreage of Vegetables, by Province, 1957-59

Province	1957	1958ʳ	1959
	acres	acres	acres
Nova Scotia[1]	4,740	5,120	5,430
New Brunswick[1]	910	1,320	1,420
Quebec	53,710	61,120	66,410
Ontario	115,270	100,750	99,160
Manitoba[2]	1,990	3,610	3,870
Alberta[2]	12,000	13,790	13,840
British Columbia	17,250	14,260	15,300
Totals	**205,870**	**199,970**	**205,430**

[1] Acreages of peas in Prince Edward Island and New Brunswick are included with Nova Scotia. [2] Acreages of beans, corn and peas in Manitoba are included with Alberta.

30.—Estimated Commercial Acreage and Production of Vegetables 1957-59, with Average for 1950-54

Vegetable	Av. 1950-54		1957		1958^r		1959	
	Area	Production	Area	Production	Area	Production	Area	Production
	acres	'000 lb.	acres	'000 lb.	acres	'000 lb.	acres	'000 lb.
Asparagus	2,840	5,967	3,800	7,505	3,820	7,612	3,930	7,565
Beans[1]	8,600	42,390	11,200	50,380	12,630	54,066	11,170	36,760
Beets	3,140	51,520	3,890	55,285	3,330	46,816	3,610	58,061
Cabbage	6,610	115,590	6,480	109,185	7,130	160,894	7,450	120,163
Carrots	7,820	145,053	10,210	174,035	11,870	244,718	12,510	245,315
Cauliflower	2,490	26,983	2,100	22,986	2,580	28,758	2,830	25,265
Celery	2,290	52,239	2,300	45,638	1,490	45,279	1,380	42,964
Corn[2]	44,020	216,925	47,080	307,201	51,420	317,922	54,070	311,084
Lettuce	4,940	64,130	4,730	43,240	6,040	80,328	6,110	57,364
Onions	6,700	126,197	5,720	111,863	6,380	113,571	7,470	142,785
Peas[3]	41,620	88,923	54,980	145,878	38,050	90,920	40,230	89,673
Spinach	1,420	13,677	1,070	11,021	1,040	10,850	1,230	14,970
Tomatoes	45,440	648,744	51,380	617,727	51,570	812,766	42,840	730,454

[1] Estimates apply only to that portion of the crop grown for processing in Quebec, Ontario, Manitoba and Alberta in 1957; in Ontario in 1958 and 1959. [2] Estimates apply only to that portion of the crop grown for processing in Quebec, Manitoba and Alberta in 1957. [3] Estimates apply only to that portion of the crop grown for processing in all provinces for which estimates are made except British Columbia in 1957, 1958 and 1959.

Subsection 8.—Other Principal Farm Products

Tobacco.—The chief tobacco growing area of Canada is located in southern Ontario in the counties adjacent to Lake Erie. Most of the cigarette tobacco comes from this district. In Ontario in 1959, 111,224 acres of flue-cured or Bright Virginia type tobacco and 6,172 acres of Burley tobacco were harvested. These are the most important types grown in Canada though dark air-cured and fire-cured tobacco as well as cigar tobacco are grown on a limited scale. The only other important production comes from Quebec. In 1959, 5,492 acres of flue-cured tobacco, 4,000 acres of cigar tobacco and 763 acres of pipe tobacco were harvested in that province.

A study of Department of National Revenue reports on tax-paid withdrawals of tobacco products reveals changes in the smoking habits of Canadians during the past three decades. In 1922, the first year for which comparable figures are available, Canadian annual per capita consumption of cigarettes was 229, cigars 20, cut tobacco 1.3 lb., plug tobacco 1.1 lb. and snuff about 1.3 oz. By 1959 the annual per capita consumption of cigarettes had increased to 1,939, cigars had decreased slightly to 17.9, cut tobacco had gone up to 1.6 lb. in 1954 but had declined to 1.2 in 1959, and plug tobacco had also declined considerably.

31.—Acreage, Production and Value of the Commercial Crop of Leaf Tobacco, by Province, 1955-59, with Average for 1949-53

Year	Quebec			Ontario			British Columbia		
	Harvested Area	Production	Value	Harvested Area	Production	Value	Harvested Area	Production	Value
	acres	'000 lb.	$	acres	'000 lb.	$	acres	'000 lb.	$
Av. 1949-53	9,010	8,885	2,655,000	95,404	129,558	55,174,800	103	120	45,000
1955	12,987	13,766	4,117,000	96,833	120,981	53,531,000	89	93	37,000
1956	11,291	10,252	3,018,000	116,356	151,589	69,001,000	75	99	40,000
1957	9,786	8,333	2,854,000	126,961	156,488	75,716,000	40	44	19,000
1958	9,517	8,901	3,255,000	124,557	188,364	86,333,000	40	27	10,000
1959	10,275	11,736	4,722,000	117,801	158,120	85,660,000	40	33	14,000

32.—Acreage, Production and Value of the Commercial Crop of Leaf Tobacco, by Main Type, 1955-59, with Average for 1949-53

Type of Tobacco and Year	Harvested Area	Average Yield per Acre	Total Production	Average Farm Price per lb.	Gross Farm Value
	acres	lb.	lb.	cts.	$
Flue-cured Av. 1949-53	95,190	1,330	126,648,000	43.2	54,735,000
1955	98,311	1,202	118,206,000	45.3	53,535,000
1956	117,614	1,265	148,743,000	46.1	68,578,000
1957	126,353	1,201	151,743,000	49.2	74,699,000
1958	122,914	1,475	181,290,000	46.5	84,380,000
1959	116,773	1,305	152,385,000	55.4	84,410,000
Burley Av. 1949-53	4,204	1,369	5,756,000	30.3	1,745,000
1955	4,033	1,737	7,005,000	30.1	2,109,000
1956	4,496	1,563	7,028,000	31.4	2,210,000
1957	6,000	1,353	8,116,000	32.7	2,658,000
1958	7,299	1,642	11,984,000	34.8	4,168,000
1959	6,192	1,748	10,822,000	36.3	3,931,000
Cigar leaf Av. 1949-53	2,990	1,209	3,616,000	22.9	827,000
1955	4,570	1,279	5,846,000	20.5	1,199,000
1956	3,235	1,174	3,797,000	19.9	756,000
1957	3,300	1,181	3,897,000	24.0	935,000
1958	3,085	1,009	3,122,000	24.5	765,000
1959	4,000	1,306	5,223,000	29.9	1,565,000
Totals[1] Av. 1949-53	**104,512**	**1,326**	**138,564,000**	**41.8**	**57,874,000**
1955	**109,999**	**1,227**	**134,840,000**	**42.8**	**57,685,000**
1956	**127,722**	**1,274**	**161,940,000**	**44.5**	**72,059,000**
1957	**136,787**	**1,205**	**164,865,000**	**47.7**	**78,589,000**
1958	**134,126**	**1,471**	**197,302,000**	**45.4**	**89,603,000**
1959	**128,133**	**1,326**	**169,904,000**	**53.2**	**90,403,000**

[1] Includes other types not specified.

Sugar Beets and Beetroot Sugar.—Sugar beets are grown commercially in Quebec, Ontario, Manitoba and Alberta and beet sugar factories are located in these provinces. In Quebec, commercial production is centred in the St. Hilaire area of the Eastern Townships; in Ontario, production is confined largely to the southwestern section of the province and factories are located at Wallaceburg and Chatham. Alberta produces the largest crop and in that province sugar beets are grown under irrigation.

33.—Acreage, Yield and Value of Sugar Beets and Quantity and Value of Refined Beetroot Sugar Produced 1955-59, with Average for 1949-53

Year	Sugar Beets					Refined Beetroot Sugar		
	Harvested Area	Yield per Acre	Total Yield	Average Price per Ton	Total Value	Quantity	Value	Price per lb.
	acres	tons	tons	$	$	lb.	$	cts.
Av. 1949-53	90,634[r]	10.73	972,649[r]	14.81	14,408,000[r]	263,302,843	25,701,756	9.76
1955	81,908	11.98	981,014	13.42	13,170,000	274,516,924	23,348,325	8.51
1956	78,786	11.33	892,872	17.33	15,470,000	246,621,644	21,505,407	8.72
1957	83,743	12.58	1,053,564	13.24	13,948,000	261,683,900	26,341,596	10.06
1958	97,845	13.54	1,324,759	14.47	19,175,000	339,878,748	30,928,966	9.10
1959	90,453	13.70	1,239,518	8.78	10,884,000	271,317,300	20,348,798	7.50

Eggs.—The net production of eggs in 1960 was 451,050,000 doz., which was 8,954,000 doz. fewer than in the previous year. This decrease occurred because of a moderate drop in the number of layers and despite a higher rate of lay. Domestic dissappearance, not including hatching eggs, amounted to 426,800,000 doz. as compared with 418,925,000 doz. in 1959. Per capita consumption for the year 1960 was 24.0 doz.

34.—Production, Utilization and Value of Farm Eggs, by Province, 1959 and 1960

Province	1959				1960			
	Average Number of Layers	Average Production per 100 Layers	Net Eggs Laid[1]	Total Value (Sold and Used)	Average Number of Layers	Average Production per 100 Layers	Net Eggs Laid[1]	Total Value (Sold and Used)
	'000	No.	'000 doz.	$'000	'000	No.	'000 doz.	$'000
Prince Edward Island	386	17,436	5,604	1,678	403	18,010	6,086	1,847
Nova Scotia	1,291	20,224	21,576	8,185	1,266	20,494	21,439	8,534
New Brunswick	543	18,211	8,163	3,601	532	18,563	8,130	3,584
Quebec	4,163	18,744	64,378	25,225	3,699	19,222	58,641	23,108
Ontario	11,873	19,959	195,662	68,759	11,406	20,567	193,762	68,920
Manitoba	2,689	17,991	40,115	10,683	2,585	18,591	39,857	10,404
Saskatchewan	2,954	17,199	41,784	10,781	2,762	17,242	39,248	10,297
Alberta	3,101	17,455	44,661	13,384	3,079	17,920	45,456	13,806
British Columbia	2,302	20,080	38,061	13,749	2,270	20,479	38,431	13,691
Totals	**29,302**	**19,026**	**460,004**	**156,045**	**28,002**	**19,516**	**451,050**	**154,191**

[1] Total laid less loss.

Wool.—Canada's wool requirements are met largely by imports which amounted to 51,492,000 lb. (greasy basis) in 1959 and 42,209,000 lb. in 1958. Exports amounted to 5,002,000 lb. in 1959 and 4,002,000 lb. in 1958. The apparent domestic consumption of wool shown in Table **35** is determined on the basis of production, exports and imports but does not take into consideration changes in stocks for which the data are not available. Differences in wool utilization from year to year are therefore probably less marked than indicated by these figures.

35.—Production and Apparent Consumption of Wool, 1954-59

Item		1954	1955	1956	1957	1958[r]	1959
Shorn Wool—							
Yield per fleece	lb.	7.4	7.3	7.3	7.2	7.4	7.6
Total yield shorn	'000 lb.	6,272	6,253	6,165	6,050	6,345	6,800
Price per pound	cts.	37.8	35.3	37.8	41.4	48.1[1]	43.6[1]
Total value of shorn wool	$'000	2,367	2,208	2,328	2,507	3,053	2,966
Total pulled wool	'000 lb.	1,555	1,595	1,707	1,825	1,279	1,487
Total wool production	"	7,828	7,848	7,872	7,875	7,624	8,287
Apparent consumption	"	45,686	58,355	61,517	51,289	45,831	54,777

[1] Includes Agricultural Stabilization Act payments of 28 and 21 cents per lb. on graded wool in 1958 and 1959, respectively.

Honey.—Honey is produced commercially in all provinces of Canada except Newfoundland, Ontario being the largest producer. There is a considerable movement of honey from the Prairie Provinces to other parts of Canada. In recent years imports have been higher than exports.

Honey statistics have been compiled on an all-Canada basis since 1924 and show that the largest recorded crop was in 1948 when 45,145,000 lb. were produced. Production in 1959 was 31,527,000 lb.

In order to facilitate storage, shipment and uniformity of quality, considerable quantities of Canadian honey are pasteurized. Beekeepers' marketing co-operatives are active in several provinces. Bees are kept in some of the fruit growing districts mainly for purposes of pollination.

36.—Honey and Beeswax Production 1957-59, with Average for 1950-54

Item		Av. 1950-54	1957	1958	1959
Honey—					
Total production	'000 lb.	29,345	32,051	27,509	31,527
Average production per colony	lb.	77	98	83	95
Total value	$'000	4,585	5,906	4,632	..
Average price per lb. to producers	cts.	16	18	17	..
Beeswax—					
Production	'000 lb.	430	473	408	..
Value	$'000	195	253	187	..
Total Value, Honey and Beeswax	**$'000**	**4,780**	**6,159**	**4,819**	..
Beekeepers	No.	17,170	15,040	13,150	14,180
Bee colonies	"	380,500	325,700	332,700	330,700

37.—Honey Production, by Province, 1957-59, with Average for 1950-54

Province	Av. 1950-54	1957	1958	1959
	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Newfoundland	..	..	..	..
Prince Edward Island	69	55	65	61
Nova Scotia	122	170	162	180
New Brunswick	118	90	98	62
Quebec	3,866	3,728	2,407	3,952
Ontario	11,952	11,111	5,678	11,125
Manitoba	4,729	5,208	5,316	5,905
Saskatchewan	3,211	3,819	4,043	3,838
Alberta	4,149	6,459	7,574	5,095
British Columbia	1,129	1,411	2,166	1,309
Totals	**29,345**	**32,051**	**27,509**	**31,527**

Maple Sugar and Maple Syrup.—Maple syrup is produced in the Provinces of Nova Scotia, New Brunswick, Quebec and Ontario. The bulk of the crop comes from the Eastern Townships of Quebec, a district famous both in Canada and in the United States as the centre of the maple products industry. Virtually all of the maple products exported are sent to the United States with the larger proportion moving as sugar, although substantial quantities of syrup are also shipped.

Much of the syrup sold in Canada is marketed in one-gallon cans direct to the consumer from the producer but a considerable amount of both sugar and syrup is sold each year to processing firms.

38.—Estimated Production of Maple Sugar and Maple Syrup, by Province, 1957-59, with Average for 1950-54

Province and Year	Maple Sugar			Maple Syrup			Total Value, Sugar and Syrup
	Quantity	Average Price per lb.	Value	Quantity	Average Price per gal.	Value	
	lb.	cts.	$	gal.	$	$	$
Nova Scotia—							
Av. 1950-54	12,000	53.0	6,000	5,000	4.04	19,000	26,000
1957	16,000	61.0	10,000	6,000	5.65	34,000	44,000
1958	16,000	67.0	11,000	5,000	5.91	30,000	41,000
1959	14,000	64.0	9,000	5,000	5.60	28,000	37,000
New Brunswick—							
Av. 1950-54	72,000	48.0	34,000	10,000	4.35	45,000	79,000
1957	96,000	60.0	58,000	19,000	4.99	95,000	153,000
1958	77,000	58.0	45,000	14,000	4.98	70,000	115,000
1959	47,000	60.0	28,000	8,000	5.15	41,000	69,000
Quebec—							
Av. 1950-54	1,518,000	40.1	608,000	2,103,000	3.69	7,764,000	8,373,000
1957	536,000	44.0	236,000	2,705,000	3.08	8,328,000	8,564,000
1958	690,000	44.0	302,000	2,066,000	3.11	6,435,000	6,737,000
1959	418,000	40.0	167,000	2,106,000	3.91	8,228,000	8,395,000
Ontario—							
Av. 1950-54	25,000	46.0	12,000	346,000	4.20	1,453,000	1,464,000
1957	13,000	52.0	7,000	338,000	4.65	1,574,000	1,581,000
1958	32,000	56.0	18,000	318,000	4.81	1,529,000	1,547,000
1959	9,000	82.0	7,000	190,000	5.05	960,000	967,000
Totals—							
Av. 1950-54	**1,627,000**	**40.6**	**660,000**	**2,464,000**	**3.77**	**9,282,000**	**9,942,000**
1957	**661,000**	**47.0**	**311,000**	**3,068,000**	**3.27**	**10,031,000**	**10,342,000**
1958	**815,000**	**46.0**	**376,000**	**2,403,000**	**3.36**	**8,064,000**	**8,440,000**
1959	**488,000**	**43.0**	**211,000**	**2,309,000**	**4.01**	**9,257,000**	**9,468,000**

Nursery Stock.—Statistics concerning the nursery industry in Canada for the years 1958 and 1959 are presented in Tables **39** and **40**. All nurseries were asked to report quantities sold of stock propagated or imported during these periods. Stock purchased from other nurseries in Canada was excluded to prevent duplication. A total of 443 nurseries reported shipments in 1959 as compared with 279 the previous season. Provincial distribution was as follows: Ontario 228, British Columbia 97, Quebec 49, Manitoba 23, the Maritime Provinces 22, Alberta 14 and Saskatchewan 10.

39.—Nursery Stock Shipments, by Type, 1958 and 1959

Classification	1958			1959		
	Domestic Shipments	Imported Shipments	Total	Domestic Shipments	Imported Shipments	Total
	No.	No.	No.	No.	No.	No.
Fruit Trees, Shrubs, Plants—						
Apple species	420,588	7,305	427,893	436,845	10,314	447,159
Tender tree-fruit species	275,542	32,542	308,084	314,265	23,821	338,086
Small fruit species	4,419,675	184,746	4,604,421	4,446,224	519,889	4,966,113
Other species	501,285	12,158	513,443	371,547	21,889	393,436
Ornamental Species—						
Rose bushes	460,879	520,373	981,252	592,113	872,062	1,464,175
Other ornamental shrubs	3,167,209	882,142	4,049,351	3,569,901	665,307	4,235,208
Deciduous trees	381,068	114,253	495,321	543,289	61,955	605,244
Evergreen trees	1,329,200	383,260	1,712,460	1,631,726	163,661	1,795,387
Ornamental climbers	43,206	19,816	63,122	25,081	29,667	54,748
Bulbs and tubers	3,783,225	4,475,131	8,258,356	10,315,900	4,115,392	14,431,292
Herbaceous perennials	785,748	223,160	1,008,908	956,483	65,731	1,022,214

40.—Acreage of Nursery Stock, by Province, 1958 and 1959

Province	1958		1959	
	Fruit Species	Ornamental Species	Fruit Species	Ornamental Species
	acres	acres	acres	acres
Quebec[1]	76.2	195.5	256.0	779.0
Ontario	485.9	2,094.1	264.0	2,072.0
Prairie Provinces	80.2	271.3	76.0	459.0
British Columbia	158.7	151.7	36.0	162.0
Totals	**801.0**	**2,712.6**	**632.0**	**3,472.0**

[1] Includes the Maritime Provinces for which insufficient information was reported.

Subsection 9.—Prices of Agricultural Products

The monthly index of farm prices of agricultural products was designed to measure changes occurring in the average prices farmers receive at the farm from the sale of farm products. In comparing current index numbers with those before August 1957, certain points should be considered. Western grain prices used in the construction of the index before Aug. 1, 1957 are final prices for all grains. Since that date only initial prices are available for western wheat, oats and barley. Subsequent participation payments made on the 1959 crops will be added to the prices currently used and the index revised upward accordingly.

41.—Average Index Numbers of Farm Prices of Agricultural Products, by Province, 1950-59, and Monthly Indexes for 1958 and 1959

(1935-39=100)

Note.—A description of this index, its coverage and the methods used will be found in DBS *Quarterly Bulletin of Agricultural Statistics* (Catalogue No. 21-003) for October-December 1946.

Year and Month	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
Averages—										
1950	**189.6**	**206.5**	**216.8**	**260.9**	**265.1**	**274.4**	**251.5**	**276.2**	**244.3**	**260.8**
1951	**236.4**	**243.2**	**250.8**	**305.6**	**315.0**	**301.6**	**268.7**	**308.0**	**287.1**	**296.8**
1952	**351.6**	**275.1**	**344.5**	**290.2**	**286.2**	**266.8**	**245.9**	**265.3**	**291.4**	**274.4**
1953	**191.5**	**234.8**	**213.2**	**272.1**	**263.8**	**245.3**	**228.7**	**247.8**	**265.7**	**250.4**
1954	**196.1**	**230.2**	**211.8**	**264.3**	**252.8**	**227.5**	**208.7**	**232.4**	**249.6**	**236.8**
1955	**220.6**	**220.0**	**226.0**	**261.7**	**249.2**	**225.6**	**203.5**	**223.2**	**248.5**	**232.7**
1956	**240.1**	**208.7**	**235.1**	**258.8**	**250.5**	**227.0**	**208.5**	**224.0**	**256.9**	**234.6**
1957	**197.0**	**212.6**	**219.4**	**264.8**	**255.4**	**222.4**	**201.6**	**223.6**	**260.2**	**234.2**
1958[r]										
January	188.3	206.1	213.6	265.3	253.8	225.7	206.7	223.1	256.9	234.6
February	192.2	206.9	217.3	271.4	261.1	230.6	210.0	228.7	257.7	239.8
March	275.7	221.6	261.6	274.9	267.0	232.7	211.3	232.3	262.4	245.4
April	245.6	223.6	260.1	279.0	270.9	238.6	214.1	236.1	269.6	248.9
May	190.6	216.0	229.6	282.4	278.0	242.7	217.0	242.0	273.6	252.3
June	175.8	218.6	210.1	284.6	276.9	241.5	215.4	237.6	267.1	250.2
July	197.6	219.9	253.5	282.6	274.1	239.1	213.1	236.6	264.4	249.3
August	218.6	228.2	224.7	279.1	266.9	238.0	214.3	238.0	261.8	246.9
September	190.5	216.6	217.6	271.0	262.5	237.1	217.0	238.6	255.6	244.2
October	180.2	214.4	207.7	269.1	263.0	235.6	217.8	241.0	261.4	244.5
November	190.8	213.7	214.0	267.5	259.9	237.6	217.7	241.2	262.7	243.9
December	194.8	215.6	214.7	270.2	264.2	240.2	219.2	241.9	264.6	246.4
Averages, 1958	**203.4**	**216.8**	**227.0**	**274.8**	**266.5**	**236.6**	**214.5**	**236.4**	**263.2**	**245.5**

41.—Average Index Numbers of Farm Prices of Agricultural Products, by Province, 1950-59, and Monthly Indexes for 1958 and 1959—concluded

Year and Month	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
1959										
January	190.9	221.9	213.9	273.9	270.3	244.9	221.6	242.5	265.6	249.8
February	179.0	221.5	211.0	274.2	266.5	242.5	219.6	240.9	268.3	247.7
March	178.5	218.0	212.1	274.4	260.3	241.0	218.4	240.5	261.9	245.0
April	180.8	220.5	208.7	270.4	260.8	241.1	218.2	240.9	260.3	244.7
May	277.3	226.2	242.0	271.2	261.2	242.0	216.9	243.1	258.0	246.9
June	282.3	234.1	259.8	273.9	261.6	240.4	217.1	242.3	263.4	247.9
July	261.6	237.2	282.9	278.0	265.0	242.0	218.6	242.4	267.9	250.3
August	299.9	237.9	294.6	274.7	264.8	231.3	199.7	223.1	260.5	241.7
September	237.1	230.5	237.4	271.8	264.9	227.0	201.4	225.0	262.0	239.8
October	230.7	226.8	232.9	271.1	265.2	221.3	196.6	216.7	261.9	236.4
November	241.6	225.7	240.2	268.1	264.1	218.1	192.5	211.2	261.5	233.8
December	232.5	221.4	238.2	268.2	260.4	218.4	190.3	205.3	257.4	230.7
Averages, 1959	**232.7**	**226.8**	**239.5**	**272.5**	**263.8**	**234.2**	**209.2**	**231.2**	**262.4**	**242.9**

Monthly prices of grain and monthly prices of livestock are shown in DBS *Quarterly Bulletin of Agricultural Statistics* (Catalogue No. 21-003).

42.—Average Cash Prices per Bushel of Canadian Cereals (Basis, in Store at Fort William and Port Arthur, Ont.), Crop Years Ended July 31, 1950-59

NOTE.—Statistics for 1926-49 are given in the corresponding table of previous Year Books.

Year Ended July 31—	Averages in Cents and Eighths per Bushel				
	Wheat,[1] No. 1 N.	Oats,[2] No. 2 C.W.	Barley,[2] No. 2 C.W. —6 Row	Rye,[2] No. 2 C.W.	Flaxseed,[2] No. 1 C.W.
	cts.	cts.	cts.	cts.	cts.
1950	183/3	90/4	158/7	146	371/6
1951	185/6	95/4	147/4	184/5	441/4
1952	183/5	90/6	132/5	193/5	428/1
1953	181/7	79/7	133/5	158/2	329
1954	156/3	72/7	108/1	99/1	283/6
1955	165/1	89/5	123/4	112/2	309/1
1956	160/7	82/7	116/5	110/1	360/1
1957	158/7	79/4	114/2	119/7	298/4
1958	162/1	75/4	106/4	106	303
1959	159/5	76/6	107/7	108	302

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[1] Initial payments plus additional payments to producers. [2] Based on cash closing prices, Winnipeg Grain Exchange.

43.—Yearly Average Prices per 100 lb. of Canadian Livestock at Principal Markets, 1956-59

Item	Toronto				Montreal			
	1956	1957	1958	1959	1956	1957	1958	1959
	$	$	$	$	$	$	$	$
Steers, up to 1,000 lb., good	18.80	19.05	22.90[1]	25.10[1]	18.95	18.55	22.45[1]	24.67[1]
Steers, up to 1,000 lb., medium	17.35	17.27	21.47[1]	23.08[1]	17.20	17.04	20.94[1]	22.94[1]
Steers, up to 1,000 lb., common	14.09	14.10	19.56[1]	19.95[1]	13.89	13.99	17.55[1]	20.11[1]
Steers, over 1,000 lb., good	19.07	18.82	...	...	19.56	18.41	...	...
Steers, over 1,000 lb., medium	17.37	17.05	...	...	17.61	17.29	...	...
Steers, over 1,000 lb., common	14.00	13.90	...	...	14.30	14.82	...	...
Heifers, good	16.88	17.10	21.06	23.31	16.29	16.11	19.65	21.42
Heifers, medium	15.67	15.20	19.71	21.35	13.88	14.26	17.81	19.94
Calves, fed, good	19.89	19.76	23.02	25.24	19.26	19.22	19.69	20.64
Cows, good	11.90	12.65	16.95	17.55	12.40	13.40	17.20	18.59
Cows, medium	11.12	11.62	16.05[r]	16.37	11.01	11.63	15.66	16.90
Bulls, good	13.31	14.19	19.33	20.31	13.42	14.38	19.47	20.23
Stocker and feeder steers, good	18.20	18.50	23.50	25.10	[2]	[2]	[2]	[2]
Stocker and feeder steers, common	16.02	16.15	20.86	21.28	16.00	[2]	[2]	[2]
Stock cows and heifers, good	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]
Stock cows and heifers, common	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]
Calves, veal, good and choice	24.40	25.15	30.60	33.10	21.40	21.40	26.50	28.78
Calves, veal, common and medium	17.88	18.43	23.79	26.58	16.97	16.19	20.85	22.54
Hogs, Grade B-1, dressed	26.50	30.05	28.13	23.80	25.60	30.35	28.05	23.90
Lambs, good	22.05	22.45	22.35	21.15	19.55	19.46	19.72	20.13
Lambs, common	17.50	17.35	18.08	18.65	15.63	15.26	16.51	16.52
Sheep, good	8.62	8.49	8.36	9.11	8.48	9.10	9.18	9.11

Item	Winnipeg				Edmonton			
	1956	1957	1958	1959	1956	1957	1958	1959
	$	$	$	$	$	$	$	$
Steers, up to 1,000 lb., good	17.80	17.85	21.95[1]	23.85[1]	17.00	16.95	20.74[1]	22.67[1]
Steers, up to 1,000 lb., medium	15.82	15.74	20.58[1]	22.20[1]	15.54	15.40	19.23[1]	20.94[1]
Steers, up to 1,000 lb., common	12.73	12.39	17.99[1]	19.25[1]	11.80	12.22	16.89[1]	18.48[1]
Steers, over 1,000 lb., good	18.02	17.72	...	...	16.85	16.91	...	...
Steers, over 1,000 lb., medium	16.29	15.55	...	...	15.63	15.18	...	...
Steers, over 1,000 lb., common	13.54	12.42	...	...	13.33	12.95	...	...
Heifers, good	15.64	16.55	20.42	22.26	14.91	15.12	19.06	20.66
Heifers, medium	13.47	13.89	18.31	19.38	12.86	13.28	17.71	18.97
Calves, fed, good	17.87	17.54	21.76	23.49	16.58	16.51	20.03	21.75
Cows, good	10.95	11.90	16.60	17.05	10.05	11.00	15.17	15.49
Cows, medium	9.69	10.61	15.40	15.83	9.15	10.08	14.26	14.54
Bulls, good	11.01	12.66	18.12	18.37	10.67	12.63	17.70	16.99
Stocker and feeder steers, good	16.20	17.00	21.60	22.90	15.10	16.12	21.23	22.62
Stocker and feeder steers, common	12.81	14.19	18.38	19.21	12.51	13.47	18.32	18.79
Stock cows and heifers, good	11.54	12.17	18.50	20.18	10.86	12.06	16.61	18.21
Stock cows and heifers, common	9.35	10.11	16.58	17.35	8.13	9.60	14.54	14.97
Calves, veal, good and choice	23.20	23.65	28.45	31.75	18.90	19.60	24.85	24.65
Calves, veal, common and medium	16.02	16.98	22.46	25.63	13.31	14.90	18.63	20.15
Hogs, Grade B-1, dressed	23.40	28.20	25.20	21.30	23.40	27.55	24.59	20.46
Lambs, good	18.25	18.60	18.85	17.80	18.25	18.76	19.80	17.54
Lambs, common	13.74	15.06	15.87	16.08	15.81	16.49	16.96	15.51
Sheep, good	4.65	4.78	4.62	4.63	8.07	9.00	13.25	8.69

[1] All weights; beginning in 1958 prices for steers are not classified by weight. [2] No sales reported.

Subsection 10.—Food Consumption

Food consumption figures represent available supplies, including production and imports, adjusted for change of stocks, exports, marketing losses and industrial uses. All calculations are made at the retail stage of distribution, except for meats for which the figures are worked out at the wholesale stage. The amount of food actually eaten would be somewhat lower than indicated because of losses and waste occurring after the products reach the hands of the consumer. It should also be pointed out that there are minor inaccuracies in certain of the figures since statistics of storage stocks in the hands of retailers and consumers are not available.

All basic foods are classified under 13 main commodity groups. The total for each group is computed using a common denominator for the group, for example: milk solids (dry weight) in the dairy products group; fat content for fats and oils; and fresh equivalent for fruits. All foods are included in their basic form, that is, as flour, fat, sugar, etc., rather than in more highly manufactured forms.

The series in Table 44 represents the official estimates of yearly supplies of food moving into consumption, expressed in pounds per capita, for the years 1935-39 as an average for comparison with the years 1957, 1958 and 1959.

44.—Per Capita Supplies of Food Moving into Consumption 1957-59, with Average for 1935-39

NOTE.—Many of the figures for 1958 and some of those for previous years shown have been revised since the publication of the 1960 Year Book.

Kind of Food and Weight Base		Pounds per Capita per Annum				Percentages of 1935-39 Average		
		Average 1935-39	1957^{r}	1958^{r}	1959	1957^{r}	1958^{r}	1959
Cereals	**Retail wt.**	**205.7**	**155.6**	**160.2**	**153.3**	**75.6**	**77.9**	**74.5**
Flour (including rye flour)[1]	"	184.8	138.8	142.8	136.0	75.1	77.3	73.6
Oatmeal and rolled oats	"	7.3	5.2	4.9	4.9	71.2	67.1	67.1
Pot and pearl barley	"	0.3	0.2	0.2	0.2	66.7	66.7	66.7
Corn meal and flour	"	1.4	0.8	1.1	1.4	57.1	78.6	100.0
Buckwheat flour	"	0.2	0.1	0.1	0.1	50.0	50.0	50.0
Rice	"	4.3	4.3	4.4	4.0	100.0	102.3	93.0
Breakfast food	"	7.4	6.2	6.7	6.7	83.8	90.5	90.5
Potatoes	**Retail wt.**	**192.9**	**161.7**	**145.9**	**147.1**	**83.8**	**75.6**	**76.3**
Potatoes, white	"	192.3	161.1	145.4	146.6	83.8	75.6	76.2
Potatoes, sweet	"	0.6	0.6	0.5	0.5	100.0	83.3	83.3
Sugars and Syrups	**Sugar content**	**101.7**	**101.5**	**105.6**	**106.0**	**99.8**	**103.8**	**104.2**
Sugar	Refined wt.	94.7	93.6	97.6	98.3	98.8	103.1	103.8
Maple sugar	Retail wt.	1.8	0.6	0.8	0.6	33.3	44.4	33.3
Other	"	8.2	11.3	11.3	11.1	137.8	137.8	125.4
Starch	**Retail wt.**	**2.5**	**1.6**	**1.6**	**1.6**	**64.0**	**64.0**	**64.0**
Pulses and Nuts	**Retail wt.**	**14.5**	**10.9**	**10.2**	**10.6**	**75.2**	**70.3**	**73.1**
Dry beans	"	3.7	3.3[2]	3.7[2]	3.8[2]	89.2	100.0	102.7
Dry peas	"	5.7	1.8	1.3	1.1	31.6	22.8	19.3
Peanuts	Shelled wt.	2.2	3.0	2.8	2.9	136.4	127.3	131.8
Tree nuts	"	1.1	1.3	1.1	1.4	118.2	100.0	127.3
Cocoa	Green beans	3.7	3.1	2.7	2.9	83.8	73.0	78.4
Fruit	**Fresh equiv.**	**138.7**	**219.1**	**216.7**	**228.9**	**158.0**	**156.2**	**165.0**
Tomatoes and Citrus Fruit—								
Tomatoes, fresh	Retail wt.	15.4	15.3	17.2	17.8	99.4	111.7	115.6
Tomato products[3]	Net wt. canned	10.0	17.0	16.4	16.6	170.0	164.0	166.0
Citrus fruit, fresh	Retail wt.	25.1	35.5	29.0	34.7	141.4	115.5	138.2
Citrus fruit juice	Net wt. canned	0.5	15.9	14.6	16.0	3,180.0	2,920.0	3,200.0
Other Fruit—								
Fresh	Retail wt.	40.5	63.4	67.0	69.7	156.5	165.4	172.1
Canned	Net wt. canned	6.3	14.5	15.6	16.1	230.2	247.6	255.6

For footnotes, see end of table.

44.—Per Capita Supplies of Food Moving into Consumption 1957-59, with Average for 1935-39—concluded

Kind of Food and Weight Base		Pounds per Capita per Annum				Percentages of 1935-39 Average		
		Average 1935-39	1957r	1958r	1959	1957r	1958r	1959
Fruit—concluded								
Other Fruit—concluded								
Dried	Processed wt.	8.3	5.3	6.1	5.9	63.9	73.5	71.1
Juice	Net wt. canned	...	4.6	5.3	5.6	...	...	...
Frozen	Retail wt.	0.2	1.6	2.1	2.4	800.0	1,050.0	1,200.0
Vegetables	**Fresh equiv.**	**78.4**	**94.3**	**99.6**	**98.1**	**120.3**	**127.0**	**125.1**
Fresh—								
Cabbage and greens	Retail wt.	16.2	18.4	21.8	19.7	113.6	134.6	121.6
Carrots	"	15.4	11.8	15.1	15.4	76.6	98.1	100.0
Legumes	"	6.2	2.9	2.5	2.2	46.8	40.3	35.5
Other	"	29.8	36.2	37.0	37.9	121.5	124.2	127.2
Canned	Net wt. canned	10.8	19.8	17.9	17.8	183.3	165.7	164.8
Frozen	Retail wt.	...	2.0	2.1	1.8	...	...	...
Oils and Fats	**Fat content**	**41.4**	**42.0**	**42.4**	**42.5**	**101.4**	**102.4**	**102.7**
Margarine	Retail wt.	...	7.8	8.5	8.7	...	...	...
Lard	"	3.9	7.0	7.0	7.8	179.5	179.5	200.0
Shortening	"	10.6	9.2	9.6	9.2	86.8	90.6	86.8
Salad and cooking oil	"	1.8	2.9	3.2	3.7	161.1	177.8	205.6
Butter	"	31.0	20.3	19.1	18.1	65.5	61.6	58.4
Eggs	**Fresh equiv.**	**30.7**	**38.1**[4]	**37.2**[4]	**36.0**[4]	**124.1**	**121.2**	**117.3**
Meat	**Carcass wt.**	**118.1**	**142.5**	**138.0**	**143.3**	**120.7**	**116.9**	**121.3**
Pork	"	39.8	46.2	51.7	58.4	116.1	129.9	146.7
Beef	"	54.7	74.8	64.8	64.4	136.7	118.5	117.7
Veal	"	10.5	9.0	8.8	7.5	85.7	83.8	71.4
Mutton and lamb	"	5.6	2.6	2.7	3.0	46.4	48.2	53.6
Offal	Edible wt.	5.8	5.3	4.8	5.1	91.4	82.8	87.8
Canned meat	Net wt. canned	1.4	5.2	5.6	4.5	371.4	400.0	321.4
Poultry and Fish	**Edible wt.**	**22.4**	**32.5**	**33.8**	..	**145.1**	**150.9**	..
Hens and chickens	Eviscerated wt.	12.2	19.4[4]	21.1[4]	22.0[4]	159.0	173.0	180.3
Other poultry	"	2.3	6.6[4]	6.5[4]	8.4[4]	287.0	282.6	365.2
Fish and shellfish, fresh and frozen	Edible wt.	[5]	6.9	7.5	..	..	..	..
Fish, cured (smoked, salted, pickled)	"	[5]	1.9	1.8	..	..	..	..
Fish and shellfish, canned	Net wt. canned	2.7	4.7	4.4	..	174.1	163.0	..
Milk and Cheese	**Milk solids**	**52.0**	**65.2**	**65.6**	**66.0**	**125.4**	**126.2**	**126.9**
Cheddar cheese[6]	Retail wt.	3.7	5.6	5.6	5.6	151.4	151.4	151.4
Other cheese	"	0.2	1.2	1.2	1.4	600.0	600.0	700.0
Cottage cheese	"	0.2	1.1	1.1	1.2	550.0	550.0	600.0
Evaporated whole milk	"	6.1	18.2	17.7	17.5	298.4	290.2	286.9
Condensed whole milk	"	0.6	0.8	0.9	0.8	133.3	150.0	133.3
Whole milk powder	"	0.1	0.3	0.2	0.2	300.0	200.0	200.0
Condensed skim milk	"	0.4	0.2	0.2	0.2	50.0	50.0	50.0
Skim milk powder	"	1.8	5.4	6.4	7.0	300.0	355.6	388.9
Evaporated skim milk	"	0.1	0.6	0.6	0.4	600.0	600.0	400.0
Milk in ice cream	"	10.9	36.0	36.4	39.0	330.3	333.9	357.8
Powdered buttermilk	"	0.2	0.5	0.5	0.4	250.0	250.0	200.0
Fluid whole milk[7]	"	408.5	400.2[4]	396.1[4]	393.7[4]	98.0	97.0	96.4
Beverages	**Primary distribution wt.**	**7.2**	**11.2**	**11.2**	**12.0**	**155.6**	**155.6**	**166.7**
Tea	" "	3.5	2.8	2.6	2.6	80.0	74.3	74.3
Coffee	Green beans	3.7	8.4	8.6	9.4	227.0	232.4	254.1

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[1] Fluctuations in apparent per capita flour consumption are caused partly by lack of complete data on flour inventories in all positions. [2] Includes soybean flour. [3] Tomatoes canned, tomato juice, tomato pulp, paste and purée. [4] Exclusive of Newfoundland. [5] Breakdown according to current classification not available. [6] Includes process cheese. [7] Includes cream expressed as milk.

Disappearance of Meats and Lard.—Production of meats from slaughter in Canada, total supply, distribution and per capita disappearance of meats and lard are shown in Table **45**. All estimates are on a carcass-weight basis except canned meats, which are in terms of product.

45.—Supply, Distribution and Disappearance of Meats and Lard 1955-59, with Average for 1946-50

Item		Average 1946-50	1955	1956	1957	1958	1959
Beef—							
Animals slaughtered in Canada	'000	1,923.3	2,271.1	2,441.2	2,602.5	2,324.4	2,216.1
Estimated dressed weight	'000 lb.	909,487	1,102,619	1,182,517	1,288.238	1,163,595	1,130,142
On hand, Jan. 1	"	30,708	23,648	29,682	33,251	29,689	31,417
Imports for consumption[1]	"	3,554	19,829	18,266	21,974	26,458	36,286
Total supply	"	943,749	1,146,096	1,230,465	1,343,463	1,219,742	1,197,845
Exports[1]	"	101,672	12,787	18,634	55,312	63,925	29,959
Used for canning	"	39,108	18,197	20,713	17,974	19,374	16,651
On hand, Dec. 31	"	27,217	29,682	33,251	29,689	31,417[r]	27,740
DOMESTIC DISAPPEARANCE	'000 lb.	775,752	1,085,430	1,157,867	1,240,488	1,105,026[r]	1,123,495
PER CAPITA DISAPPEARANCE	lb.	60.0	69.1	72.0	74.8	64.8	64.4
Veal—							
Animals slaughtered in Canada	'000	1,310.1	1,295.0	1,336.7	1,381.2	1,430.7	1,184.5
Estimated dressed weight	'000 lb.	132,957	134,551	140,220	150,551	150,796	130,532
On hand, Jan. 1	"	5,509	3,700	4,662	5,701	5,214	4,608
Imports for consumption	"	[2]	[2]	[2]	[2]	[2]	[2]
Total supply	"	138,466	138,251	144,882	156,252	156,010	135,140
Exports	"	[2]	[2]	[2]	[2]	[2]	[2]
Used for canning	"	2,608	1,297	1,483	957	1,240	977
On hand, Dec. 31	"	5,080	4,662	5,701	5,214	4,608[r]	3,862
DOMESTIC DISAPPEARANCE	'000 lb.	130,778	132,292	137,698	150,081[r]	150,162[r]	130,301
PER CAPITA DISAPPEARANCE	lb.	10.1	8.4	8.6	9.0	8.8	7.5
Mutton and Lamb—							
Animals slaughtered in Canada	'000	1,077.7	754.9	761.6	766.8	727.2	749.4
Estimated dressed weight	'000 lb.	47,640	32,385	32,292	33,356	31,779	32,824
On hand, Jan. 1	"	6,843	2,901	4,816	4,865	4,693	9,490
Imports for consumption	"	103	10,796	9,546	11,015	21,547	20,118
Total supply	"	54,586	46,082	46,654	49,236	58,019	62,432
Exports	"	5,522	273	45	472	1,377	749
Used for canning	"	508	330	628	558	1,022	3,087
On hand, Dec. 31	"	6,113	4,816	4,865	4,693	9,490[r]	5,874
DOMESTIC DISAPPEARANCE	'000 lb.	42,443	40,663	41,116	43,513	46,130[r]	52,722
PER CAPITA DISAPPEARANCE	lb.	3.3	2.6	2.6	2.6	2.7	3.0
Pork—							
Animals slaughtered in Canada	'000	6,840.4	6,932.2	6,899.3	6,515.5	7,766.4	9,882.7
Estimated dressed weight	'000 lb.	890,307	887,708	887,250	847,015	1,012,739	1,265,971
On hand, Jan. 1	"	37,773	32,280	34,965	20,571	23,821	45,310
Imports for consumption[1]	"	3,891	167	154	1,512	1,744	1,416
Total supply	"	931,971	920,155	922,369	869,098	1,038,304	1,312,697
Exports[1]	"	188,311	64,109	55,408	38,183	63,493	70,042
Used for canning	"	46,628	48,844	50,574	40,147	47,316	167,145
On hand, Dec. 31	"	37,452	34,965	20,571	23,821	45,310[r]	56,633
DOMESTIC DISAPPEARANCE	'000 lb.	659,580	772,237	795,816	766,947	882,185[r]	1,018,877
PER CAPITA DISAPPEARANCE	lb.	51.0	49.2	49.5	46.2	51.8	58.4

For footnotes, see end of table.

45.—Supply, Distribution and Disappearance of Meats and Lard 1955-59, with Average for 1946-50—concluded

Item		Average 1946-50	1955	1956	1957	1958	1959
Canned Meats—							
Estimated production	'000 lb.	89,749	76,200	81,699	69,540	75,909	175,738
On hand, Jan. 1	"	15,362	15,165	20,775	18,764	18,844	13,833
Imports for consumption	"	4,314	15,620	13,662	21,274	21,212	19,585
Total supply	"	109,425	106,985	116,136	109,578	115,965	209,156
Exports	"	56,589	14,919	11,442	5,241	6,314	6,843
On hand, Dec. 31	"	8,807	20,775	18,764	18,844	13,833	127,274
DOMESTIC DISAPPEARANCE	'000 lb.	44,029	71,291	85,930	85,493	95,818	75,039
PER CAPITA DISAPPEARANCE	lb.	3.4	4.5	5.3	5.2	5.6	4.3
Offal—							
Estimated production	'000 lb.	81,218	88,185	91,797	93,362	94,339	101,493
On hand, Jan. 1	"	6,090	5,348	5,042	5,146	5,867	4,946
Imports for consumption[1]	"	973	3,763	2,360	3,150	758	4,529
Total supply	"	88,281	97,296	99,199	101,658	100,964	110,968
Exports[1]	"	5,834	7,112	6,831	5,587	11,590	15,397
Used for canning	"	9,631	2,099	2,285	1,598	2,039	1,628
On hand, Dec. 31	"	5,796	5,042	5,146	5,867	4,946[r]	5,313
DOMESTIC DISAPPEARANCE	'000 lb.	67,020	83,043	84,937	88,606	82,389[r]	88,630
PER CAPITA DISAPPEARANCE	lb.	5.2	5.3	5.3	5.3	4.8	5.1
Lard—[3]							
Estimated production	'000 lb.	124,129	125,572	126,498	115,791	145,162	184,957
On hand, Jan. 1	"	2,620	5,490	5,707	4,866	6,823	8,608
Imports for consumption	"	9,358	6,195	15,301	28,015	5,224	2,736
Total supply	"	136,106	137,257	147,506	148,672	157,209	196,301
Exports	"	431	1,312	320	8	475	9,217
On hand, Dec. 31	"	3,102	5,707	4,866	6,823	8,608[r]	7,822
DOMESTIC DISAPPEARANCE	'000 lb.	132,573	130,238	142,320	141,841	148,126[r]	179,262
PER CAPITA DISAPPEARANCE	lb.	10.2	8.3	8.9	8.6	8.7	10.3

[1] Excluding canned meats. [2] Included with beef. [3] Includes commercial lard production and estimated lard equivalent of renderable pork fat available from all uninspected slaughter.

Section 5.—Agricultural Statistics of the Census

Brief statistical information on the tenure and condition of occupied farm land as reported at the 1951 and 1956 Censuses is given in the 1957-58 Year Book at pp. 455-456, and statistics for the same Censuses relating to farms, farm mechanization, electrification and area are included in the 1960 Year Book at pp. 499-501. More detailed information may be obtained from the *Census of Canada 1956*, Vol. II.

1961 Census of Agriculture.—Canada's tenth Decennial Census, which includes a Census of Agriculture, was taken on June 1, 1961. A series of bulletins giving results from the Census will be issued as the tabulated data become available, and it is expected that a good deal of agricultural information will be released before mid-1962. Provincial reports containing all published data from the Census of Agriculture should be published by early 1963. Summary statistics will be included in the 1962 Canada Year Book.

Agricultural information collected in the Census includes data relating to land use, crop acreages, livestock numbers, and farm machinery, labour and capital. Forest products cut, sold or used on farms were enumerated on a *Woodland* questionnaire and in the Provinces of Ontario, Saskatchewan, Alberta and British Columbia an *Irrigation* questionnaire secured additional information for irrigated farms.

Separate tables will be published of data for commercial farms and for farms typed according to the principal products sold. Other detailed tabulations of data will be made for farms by size, tenure, economic class, and total capital.

Section 6.—International Crop Statistics

Tables **46** and **47** are based on estimates published on Dec. 29, 1960 and Jan. 26, 1961 by the Foreign Agricultural Service, United States Department of Agriculture, and give the acreages and production of wheat and the production of oats and barley for the harvests of 1958 and 1959, with averages for the years 1950-54, in the leading countries of the world.

46.—Estimated Acreages and Production of Wheat Harvested in 1958 and 1959 in Specified Countries, with Average for 1950-54

NOTE.—Many of the averages and the figures for 1958 have been revised since the publication of the 1960 Year Book.

Continent and Country	Acreages of Wheat			Production of Wheat		
	Average 1950-54	1958	1959	Average 1950-54	1958	1959
	'000 acres	'000 acres	'000 acres	'000 bu.	'000 bu.	'000 bu.
North America[1]	**91,200**	**76,460**	**78,510**	**1,651,000**	**1,883,000**	**1,594,000**
Canada	26,130	20,899	23,065	537,632	371,730	413,520
Mexico	1,647	2,075	2,338	21,788	49,130	51,440
United States	63,361	53,404	53,024	1,094,183	1,461,714	1,128,151
Europe[1]	**71,520**	**73,580**	**72,440**	**1,640,000**	**1,860,000**	**2,055,000**
Europe, West[1]	46,020	48,030	46,830	1,150,000	1,345,000	1,410,000
Austria	573	650	661	16,920	20,160	21,620
Belgium	421	542	497	20,278	28,600	29,150
Denmark	195	190	218	10,630	10,100	13,375
Finland	377	313	344	8,739	7,900	8,900
France	10,916	11,404	10,970	315,244	353,000	425,000
Germany, West	2,728	3,226	3,295	110,228	136,080	165,540
Greece	2,410	2,750	2,875	40,042	65,600	65,000
Ireland	362	419	282	13,036	12,880	13,600
Italy	12,085	12,100	11,600	288,080	360,000	311,000
Luxembourg	45	—	—	1,382	1,550	—
Netherlands	209	275	297	11,376	14,700	18,140
Norway	56	20	24	1,682	620	670
Portugal	1,785	2,066	1,983	23,526	29,900	19,200
Spain	10,470	10,872	10,774	155,000	167,000	170,000
Sweden	896	698	778	29,640	22,000	30,725
Switzerland	225	248	254	9,430	11,830	12,230
United Kingdom	2,263	2,208	1,929	94,640	101,200	104,000
Europe, East[1]	25,500	25,550	25,610	490,000	515,000	645,000
Bulgaria	3,540	3,555	3,457	66,000	72,500	75,000
Czechoslovakia	1,840	1,820	1,875	52,500	50,000	56,000
Germany, East	1,120	1,087	1,075	38,100	47,500	47,800
Hungary	3,400	2,936	2,759	72,500	55,000	70,150
Poland	3,730	3,640	3,546	70,800	86,000	92,000
Romania	6,710	7,346	7,383	108,750	110,000	147,000
Yugoslavia	—	4,917	5,263	80,000	90,000	151,750
U.S.S.R. (Europe and Asia)[2]	111,500	165,000	157,000	1,240,000	2,300,000	1,900,000

For footnotes, see end of table.

46.—Estimated Acreages and Production of Wheat Harvested in 1958 and 1959 in Specified Countries, with Average for 1950-54—concluded

Continent and Country	Acreages of Wheat			Production of Wheat		
	Average 1950-54	1958	1959	Average 1950-54	1958	1959
	'000 acres	'000 acres	'000 acres	'000 bu.	'000 bu.	'000 bu.
Asia[1]	**127,800**	**140,730**	**140,760**	**1,765,000**	**1,910,000**	**1,905,000**
China	—	—	—	890,000	—	—
India	24,456	29,300	31,141	253,950	290,000	365,000
Iran	—	—	—	75,100	99,200	110,000
Iraq	1,871	—	—	22,210	27,700	24,200
Israel	90	130	137	1,000	2,300	2,700
Japan	1,766	1,480	1,486	53,322	47,070	52,000
Jordan	651	500	—	5,600	2,400	3,800
Korea, South	245	314	309	4,260	6,100	7,300
Lebanon	165	153	153	1,902	1,300	920
Pakistan	10,364	11,815	12,000	129,800	137,000	144,000
Syria	2,277	2,446	—	26,510	20,640	14,700
Turkey	13,514	16,000	—	213,598	240,000	225,000
Africa[1]	**16,480**	**18,180**	**18,270**	**185,000**	**195,000**	**200,000**
Algeria	4,267	4,500	4,410	41,508	42,000	42,000
Egypt	1,631	1,479	1,531	49,060	51,900	53,000
Morocco[3]	3,496	4,040	3,870	35,302	40,000	36,500
Tunisia	2,399	3,170	3,274	19,796	19,100	19,300
Union of South Africa[4]	3,020	3,189	3,156	23,040	22,630	26,460
South America[1]	**17,840**	**20,090**	**16,790**	**305,000**	**330,000**	**290,000**
Argentina	11,871	12,954	10,809	216,204	245,000	215,000
Brazil	1,475	2,200	—	18,500	15,000	13,600
Chile	1,910	2,159	2,147	35,764	43,265	39,560
Colombia	430	440	395	4,860	5,700	5,300
Peru	410	334	334	5,814	4,700	4,600
Uruguay	1,515	1,707	725	22,376	13,200	6,700
Oceania	**10,832**	**10,535**	**12,334**	**185,870**	**221,850**	**207,300**
Australia	10,716	10,400	12,173	181,150	215,100	198.500
New Zealand	116	135	161	4,720	6,750	8,800
World Totals[1]	**447,170**	**504,580**	**496,100**	**6,975,000**	**8,700,000**	**8,150,000**

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[1] Estimated totals, which in the case of production are rounded to millions, include allowances for any missing data for countries shown and for other producing countries not shown. [2] Tentative unofficial production estimates. [3] Excludes data for areas formerly known as Spanish Morocco and Tangier. [4] Production on European holdings only.

47.—Estimated Production of Oats and Barley Harvested in 1958 and 1959 in Specified Countries, with Average for 1950-54

Note.—Many of the figures for 1958 have been revised since the publication of the 1960 Year Book.

Continent and Country	Oats			Barley		
	Average 1950-54	1958	1959	Average 1950-54	1958	1959
	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.
North America[1]	**1,707,000**	**1,822,000**	**1,490,000**	**519,000**	**728,000**	**656,000**
Canada	417,429	400,951	417.933	228,400	244,764	225,550
Mexico	3,759	5,800	5,500	7,554	8,270	8,450
United States	1,285,417	1,415,570	1,066,370	283,026	475,196	422,073
Europe[1]	**1,375,000**	**1,245,000**	**1,225,000**	**775,000**	**1,030,000**	**1,185,000**
Europe, West[1]	1,020,000	870,000	842,000	561,000	793,000	905,000
Austria	24,156	22,960	21,460	13,288	15,400	18,620
Belgium	32,462	30,515	29,470	12,344	14,600	18,300
Denmark	58,740	44,640	39,130	89,450	114,130	107,380
Finland	53,801	55,000	47,970	10,904	18 670	15,230
France	242,298	181,700	194,000	89,372	178,800	226,480
Germany, West	180,322	149,600	140,470	82,320	111,300	130,600
Greece	9,558	11,600	9,580	10,424	12,260	10,000

For footnote see end of table, p. 468.

47.—Estimated Production of Oats and Barley Harvested in 1958 and 1959 in Specified Countries, with Average for 1950-54—concluded

Continent and Country	Oats			Barley		
	Average 1950-54	1958	1959	Average 1950-54	1958	1959
	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.
Europe, West—concluded						
Ireland	38,744	31,360	33,250	8,910	15,400	21,140
Italy	37,516	39,160	37,240	13,057	13,600	12,800
Luxembourg	2,602	—	—	—	—	—
Netherlands	32,210	30,720	22,000	11,048	14,480	12,330
Norway	11,726	8,760	8,480	7,350	15,620	13,900
Portugal	9,424	9,875	6,400	5,620	4,670	4,070
Spain	35,306	35,765	38,580	88,830	81,620	94,160
Sweden	58,124	61,600	54,230	14,850	30,270	30,520
Switzerland	4,946	3,220	3,100	2,581	3,275	3,445
United Kingdom	186,774	149,660	153,090	100,326	147,930	187,410
Europe, East[1]	355.000	375,000	383,000	214,000	237,000	280,000
Bulgaria	11,000	10,500	13,000	16,900	17,300	21,000
Czechoslovakia	61,000	60,000	65,000	52,100	55.100	67,700
Germany, East	76,600	69,000	63,200	26,800	40,000	45,300
Hungary	11,000	13,200	17,600	29,500	33,700	50,200
Poland	148,000	183,000	172,200	50,400	55,000	47,900
Romania	26,900	19,300	21,700	19,500	14,200	20,600
Yugoslavia	19,420	17,840	27,800	16,600	21,590	26,400
U.S.S.R. (Europe and Asia)[2]	835,000	900,000	750,000	350,000	440,000	380,000
Asia[1]	**110,000**	**100,000**	**105,000**	**805,000**	**830,000**	**820,000**
China	70,000	—	—	325,000	—	—
Cyprus	—	—	—	2,547	2,840	2,250
India	—	—	—	118,280	104,440	124,700
Iran	—	—	—	36,798	43,630	45,930
Iraq	—	—	—	35,270	43,760	33,650
Israel	—	—	—	2,880	2,460	2,985
Japan	9,910	13,500	11,950	90,439	86,350	96,200
Korea, South	—	—	—	24,700	38,200	43,800
Lebanon	—	—	—	760	230	185
Pakistan	—	—	—	6,300	8,070	6,500
Syria	535	480	300	12,292	10,500	6,000
Turkey	24,958	20,000	27,500	128,380	130,000	140,000
Africa[1]	**21,000**	**11,000**	**9,000**	**150,000**	**140,000**	**125,000**
Algeria	8,940	3,300	2,500	37,494	35,825	27,000
Egypt	—	—	—	4,976	6,200	6,500
Morocco[3]	3,978	1,500	850	71,220	58,420	50,355
Tunisia	1,074	—	—	8,920	12,000	10,800
Union of South Africa	5,800	4,300	3,750	2,350	1,060	1,125
South America[1]	**67,000**	**70,000**	**80,000**	**65,000**	**75,000**	**80,000**
Argentina	56,284	58,560	67,700	39,320	48,500	51,300
Chile	6,800	7,900	7,675	4,316	5,000	5,030
Colombia	—	—	—	2,740	3,450	5,280
Peru	—	—	—	9,980	9,020	9,875
Uruguay	2,816	2,260	1,500	1,344	1,130	1,350
Oceania	**44,560**	**110,160**	**60,625**	**33,738**	**67,810**	**38,665**
Australia	42,252	108,600	58,560	31,350	65,000	35,500
New Zealand	2,308	1,560	2,065	2,388	2,810	3,165
World Totals[1]	**4,160,000**	**4,260,000**	**3,720,000**	**2,700,000**	**3,310,000**	**3,285.000**

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[1] Estimated totals, which are rounded to millions, include allowances for any missing data for countries shown and for other producing countries not shown. [2] Tentative unofficial production estimates. [3] Excludes data for areas formerly known as Spanish Morocco and Tangier.

CHAPTER X.—FORESTRY[*]

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Canada's extensive forests have been an invaluable asset to the country and its people since the earliest days of settlement. The productive portion of these forests has poured increasing wealth into the stream of national income, contributing to the economy of the country as the producer of raw materials for industry and as the source of livelihood for hundreds of thousands of persons. At the same time, the existence of widespread forest cover, productive or unproductive in the sense of human utilization, remains essential to the maintenance of the balance of nature—in protecting water-catchment areas and assuring supplies of water, in lowering the temperature, reducing the velocity of the wind and protecting the land against drought and erosion, and in providing shelter for birds and animals.

Section 1.—Forest Regions[†]

The forests of Canada cover a vast area in the north temperate climatic zone. Wide variations in physiographic, soil and climatic conditions cause marked differences in the character of the forests in different parts of the country; hence, eight fairly well defined forest regions may be recognized. These regions, with the relative proportion of the total area of all forest regions occupied by each, are as follows:—

Region	*Percentage of Forested Area*	*Region*	*Percentage of Forested Area*
Boreal..........................	82.1	Acadian.........................	2.0
Great Lakes-St. Lawrence......	6.5	Columbia........................	0.8
Subalpine........................	3.7	Deciduous......................	0.4
Montane.........................	2.3		
Coast............................	2.2	TOTAL..................	100.0

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[*] Sections of this Chapter that deal with forestry and the federal forestry program were revised in the Department of Forestry, Ottawa. Provincial forestry programs were prepared by the forestry officials of the respective provincial governments. Sections dealing with forest and allied industries, except as otherwise noted, were revised in the Forestry Section, Industry and Merchandising Division, Dominion Bureau of Statistics.

[†] A more detailed discussion of forest regions is given in Bulletin 123, *Forest Regions of Canada*, published by the Department of Forestry (a revision of Bulletin 89, *A Forest Classification for Canada*). Accounts of variations in Canadian physiography and climate are included in a special article on The Climate of Canada, appearing at pp. 23-51 of the 1959 Canada Year Book.

Boreal Forest Region.—This Region comprises the greater part of the forested area of Canada, forming a continuous belt from Newfoundland and the Labrador Coast westward to the Rocky Mountains and northwestward to Alaska. The white and the black spruces are characteristic species; other prominent conifers are tamarack which ranges throughout, balsam fir and jack pine in the eastern and central portions, and alpine fir and lodgepole pine in the western and northwestern parts. Although the forests are primarily coniferous, there is a general admixture of broadleaved trees such as the white birches and poplars; these play an important part in the central and south-central portions, particularly in the zone of transition to the prairie. In turn, the proportion of spruce and tamarack rises northward, and with increasingly rigorous climatic conditions the close forest gives way to the open lichen-woodland which finally merges into tundra. In the east there is, along the southern border of the Region, a considerable intermixture of species from the Great Lakes–St. Lawrence Forest such as the white and the red pines, yellow birch, sugar maple, black ash, and eastern white cedar.

Subalpine Forest Region.—This is a coniferous forest found on the mountain uplands in Western Canada. It extends northward to the major divide separating the drainage of the Skeena, Nass and Peace Rivers on the south and to that of the Stikine and Liard Rivers on the north. The characteristic species are Engelmann spruce, alpine fir and lodgepole pine. There is a close relationship with the Boreal Region from which the black and the white spruces and aspen intrude. There is also some entry of blue Douglas fir from the Montane Forest, and of western hemlock, western red cedar, and amabilis fir from the Coast Forest. Other species found are western larch, whitebark pine and limber pine, and on the coastal mountains yellow cedar and mountain hemlock.

Montane Forest Region.—This Region occupies a large part of the interior uplands of British Columbia, as well as a part of the Kootenay Valley and a small area on the east side of the Rocky Mountains. It is a northern extension of the typical forest of much of the western mountain system in the United States, and comes in contact with the Coast, Columbia and Subalpine Forests. Ponderosa pine is a characteristic species of the southern portions. Blue Douglas fir is found throughout, but more particularly in the central and southern parts; lodgepole pine and aspen are generally present, the latter being particularly well represented in the north-central portions. Engelmann spruce and alpine fir from the Subalpine Region become important constituents in the northern parts, together with white birch. The white spruce, though primarily Boreal in affinity, is also present here. Extensive prairie communities of bunch-grasses and forbs are found in many of the river valleys.

Coast Forest Region.—This is part of the Pacific Coast Forest of North America. Essentially coniferous, it consists principally of western red cedar and western hemlock, with abundant Sitka spruce in the north, and with the addition of Douglas fir in the south. Amabilis fir and yellow cedar occur widely and, together with mountain hemlock and alpine fir, are common toward the timberline. Western white pine is found in the southern parts and western yew is scattered throughout. Broadleaved trees, such as black cottonwood, red alder and broadleaf maple, have limited distribution in this Region. Arbutus and Garry oak occur in Canada only on the southeast coast of Vancouver Island and the adjacent islands and mainland. These are species whose centres of population lie to the south in the United States.

Columbia Forest Region.—A large part of the Kootenay River Valley, the upper valleys of the Thompson and Fraser Rivers, and the Quesnel Lake area of British Columbia contain a coniferous forest closely resembling that of the Coast Region. Western red cedar and western hemlock are the characteristic species in this interior "wet belt". Associated trees are the blue Douglas fir, which is of general distribution, and, in the southern parts, western white pine, western larch, grand fir and western yew. Engelmann spruce from the Subalpine Region is important in the upper Fraser Valley and is found to some extent at the upper levels of the forest in the remainder of the Region. At lower elevations in the west and in parts of the Kootenay Valley the forest grades into the Montane Region and, in a few places, into prairie grasslands.

Deciduous Forest Region.—A small portion of the deciduous forest, widespread in the eastern United States, occurs in southwestern Ontario between Lakes Huron, Erie and Ontario. Here, with the broadleaved trees common to the Great Lakes–St. Lawrence Region, such as sugar maple, beech, white elm, basswood, red ash, white oak and butternut, are scattered a number of other broadleaved species which have their northern limits in this locality. Among these are the tulip-tree, cucumber-tree, papaw, red mulberry, Kentucky coffee-tree, redbud, black gum, blue ash, sassafras, mockernut and pignut hickories, and scarlet, black and pin oaks. In addition, black walnut, sycamore and swamp white oak are confined largely to this Region. Conifers are few, and there is only a scattered distribution of white pine, tamarack, red juniper and hemlock.

Great Lakes–St. Lawrence Forest Region.—Along the Great Lakes and the St. Lawrence River Valley lies a forest of a very mixed nature, characterized by the white and the red pines, eastern hemlock and yellow birch. With these are associated certain dominant broadleaved species common to the Deciduous Forest Region, such as sugar maple, red maple, red oak, basswood and white elm. Other species with wide range are the eastern white cedar and large-tooth aspen and, to a lesser extent, beech, white oak, butternut and white ash. Boreal species, such as the white and the black spruces, balsam fir, jack pine, poplars and white birch, are intermixed and in certain central portions, as well as in the east, red spruce becomes abundant.

Acadian Forest Region.—Over the greater part of the Maritime Provinces, exclusive of Newfoundland, there is a forest closely related to the Great Lakes–St. Lawrence Region and, to a lesser extent, to the Boreal Region. Red spruce is a characteristic though not exclusive species, and associated with it are balsam fir, yellow birch and sugar maple, with some red pine, white pine and hemlock. Beech was formerly a more important forest constituent than at present, for the beech bark disease has drastically reduced its abundance in Nova Scotia, Prince Edward Island and southern New Brunswick. Other species of wide distribution are the black and the white spruces, red oak, white elm, black ash, red maple, white birch, wire birch and the poplars. Eastern white cedar, though present in New Brunswick, is extremely rare elsewhere, and jack pine is apparently absent from the upper St. John Valley and the western half of Nova Scotia.

Section 2.—Forest Resources

The forested area of Canada is estimated at 1,711,893 sq. miles, and about 58 p.c. of that area is capable of producing merchantable timber. Of this productive area, 725,988 sq. miles are now accessible for commercial operations and the remainder, at present beyond the reach of economical transportation facilities, contains much valuable timber that will be brought progressively into commercial development as demand requires its use and as transportation becomes available. The great areas of forest considered commercially non-productive are nevertheless of significant value to the country in the influence they exert on climate, moisture and soil. The total forested area of Canada, classified by type of growth and by province, is given in Table 1, p. 27.

There are more than 150 tree species in Canada, of which 31 are conifers, commonly called 'softwoods'. About two-thirds of these softwoods and 10 p.c. of the large number of deciduous or 'hardwood' species are of commercial importance. Approximately 82 p.c. of the volume of merchantable timber is made up of softwood species. The dominant species existing in each forest region are given in Section 1. Detailed information is contained in Forestry Department Bulletin No. 61, *Native Trees of Canada*.*

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* Obtainable from the Queen's Printer, Ottawa, price $1.50.

The predominant part played by the lumber and other forest products industries in the development of Canada has resulted in a widespread tendency to evaluate the forests in terms of timber alone. A growing realization of the economic importance of the non-timber values, however, is bringing about increasing recognition of the true value of the forests and is thus developing a broader concept of forestry.

1.—Estimate of Standing Timber, by Type and Size and by Province and Region, 1960

Province and Region	Conifers			Broadleaved			Totals		
	Large Material[1]	Smaller Material[2]	Total	Large Material[1]	Smaller Material[2]	Total	Large Material[1]	Smaller Material[2]	Total
	Million cu. ft.	'000 cords	Million cu. ft.	Million cu. ft.	'000 cords	Million cu. ft.	Million cu. ft.	'000 cords	Million cu. ft.
Accessible									
Newfoundland	2,296	129,225	13,281	293	3,755	612	2,589	132,980	13,893
Labrador	*1,101*	*63,348*	*6,486*	*83*	*2,185*	*269*	*1,184*	*65,533*	*6,755*
Island	*1,195*	*65,877*	*6,795*	*210*	*1,570*	*348*	*1,405*	*67,447*	*7,138*
Prince Edward Island	43	668	99	10	455	49	53	1,123	148
Nova Scotia	2,149	50,824	6,469	1,529	20,988	3,313	3,678	71,812	9,782
New Brunswick	4,299	89,977	11,947	2,652	26,694	4,921	6,951	116,671	16,868
TOTALS, ATLANTIC PROVINCES	8,787	270,694	31,796	4,484	51,892	8,895	13,271	322,586	40,691
Quebec	6,471	426,594	42,732	2,360	174,550	17,197	8,831	601,144	59,929
Ontario	16,785	404,493	51,167	17,633	187,844	33,599	34,418	592,337	84,766
TOTALS, CENTRAL PROVINCES	23,256	831,087	93,899	19,993	362,394	50,796	43,249	1,193,481	144,695
Manitoba	1,035	56,351	5,825	949	18,169	2,493	1,984	74,520	8,318
Saskatchewan	1,232	58,350	6,191	2,773	57,114	7,628	4,005	115,464	13,819
Alberta	12,350	196,150	29,023	11,942	132,757	23,227	24,292	328,907	52,250
TOTALS, PRAIRIE PROVINCES	14,617	310,851	41,039	15,664	208,040	33,348	30,281	518,891	74,387
British Columbia	244,265	677,754	301,874	13,228	60,283	18,352	257,493	738,037	320,226
Northwest Territories	400	36,000	3,460	360	18,500	1,932	760	54,500	5,392
Yukon Territory	400	25,500	2,567	70	6,300	606	470	31,800	3,173
Totals, Accessible	**291,725**	**2,151,886**	**474,635**	**53,799**	**707,409**	**113,929**	**345,524**	**2,859,295**	**588,564**
Totals, Potentially Accessible	**53,827**	**769,941**	**119,273**	**2,877**	**124,995**	**13,501**	**56,704**	**894,936**	**132,774**
Canada	**345,552**	**2,921,827**	**593,908**	**56,676**	**832,404**	**127,430**	**402,228**	**3,754,231**	**721,338**

[1] Ten inches D.B.H. and over (suitable for saw timber). [2] Four to nine inches D.B.H. (units of 85 cu. feet).

Tenure of Forest Land.—Corporations and private individuals own 9 p.c. of the productive forest land of Canada and 91 p.c. is in the possession of the Crown in the right of the federal or the provincial governments. Rights to cut Crown timber under lease or licence have been granted on 19 p.c. of the productive forest land; the remainder comprises unalienated productive forest areas and federal lands such as Indian reserves, military reserves, etc.

Woodlots on the 575,000 farms across Canada comprise about 5 p.c. of the total accessible productive forest. These small wooded tracts, ranging in size from three or four acres to 200 or more acres, are among the most accessible forests in Canada. Also, the woodlots of Eastern Canada are, in general, highly productive because they lie in the southern parts of the country and frequently occupy soils that are considerably higher in quality than those typical of the northern forests.

2.—Tenure of Occupied Productive Forest Land, by Province, 1960

(Net area in sq. miles)

Province or Territory	Provincial Crown Land			Federal Crown Land			Privately Owned Land			Total Occupied Productive Forest Land
	Leases and Licences	Permits and Sales	Total	Leases and Licences	Other	Total	Farm Wood-lots	Other	Total	
Newfoundland	15,245	—	15,245	—	—	—	58	1,716	1,774	17,019
Labrador	*8,489*	—	*8,489*	—	—	—	—	—	—	*8,489*
Island	*6,756*	—	*6,756*	—	—	—	*58*	*1,716*	*1,774*	*8,530*
Prince Edward Island	—	—	—	—	3	3	541	—	541	544
Nova Scotia	540	86	626	—	32	32	2,884	8,917	11,801	12,459
New Brunswick	10,386	—	10,386	—	414	414	3,100	9,439	12,539	23,339
Quebec	65,729	—	65,729	—	227	227	9,172	14,003	23,175	89,131
Ontario	82,455	—	82,455	—	1,268	1,268	6,003	10,188	16,191	99,914
Manitoba	1,488	1,056	2,544	—	355	355	2,789	1,489	4,278	7,177
Saskatchewan	1,363	875	2,238	—	592	592	4,463	1,367	5,830	8,660
Alberta	6,706	—	6,706	303	27	330	4,435	—	4,435	11,471
British Columbia	3,834	2,344	6,178	—	811	811	1,727	8,561	10,288	17,277
Northwest Territories	—	—	—	2	—	2	—	—	—	2
Yukon Territory	—	—	—	6	—	6	—	—	—	6
Canada	**187,746**	**4,361**	**192,107**	**311**	**3,729**	**4,040**	**35,172**	**55,680**	**90,852**	**286,999**

Section 3.—Forest Depletion

General information on forest depletion and increment as well as statistics on forest fires and fire losses are presented in this Section. The scientific control of the influences that account for wastage, such as forest fires, insect pests, etc., is dealt with in Section 4.

The average annual rate and cause of depletion of reserves of merchantable timber during the ten years 1949-58, together with annual data for 1958 and 1959, are given in Table 3. Of the total depletion of the forests in the ten-year period, 92 p.c. was utilized and 8 p.c. was destroyed by fire. (Information on the extent of damage caused by agencies other than fire, such as insects, disease and natural mortality, is not available.) The average annual utilization of 3,132,182,000 cu. feet comprised 47 p.c. logs and bolts, 40 p.c. pulpwood, 11 p.c. fuelwood, and about 2 p.c. miscellaneous products. About 5 p.c. of the total utilization was exported in the form of logs and bolts and pulpwood.

The accessible portion of the productive forests of Canada, covering an area of 725,988 sq. miles, constitutes the reserve from which forest production will be obtained for many years to come. The supply of merchantable timber on this area is estimated at 588,564,000,000 cu. feet and the utilization in 1959 of 3,097,100,000 cu. feet therefore represented 0.5 p.c. of the accessible productive volume. However, it should be noted that utilization does not occur evenly throughout the accessible productive forest area but is concentrated on the relatively small area of occupied forest land (land under lease, licence or private ownership). Thus, overcutting may occur on many of these occupied areas, emphasizing the need for orderly management of all commercial forests if the forest industries are to maintain a dominant position in the Canadian economy.

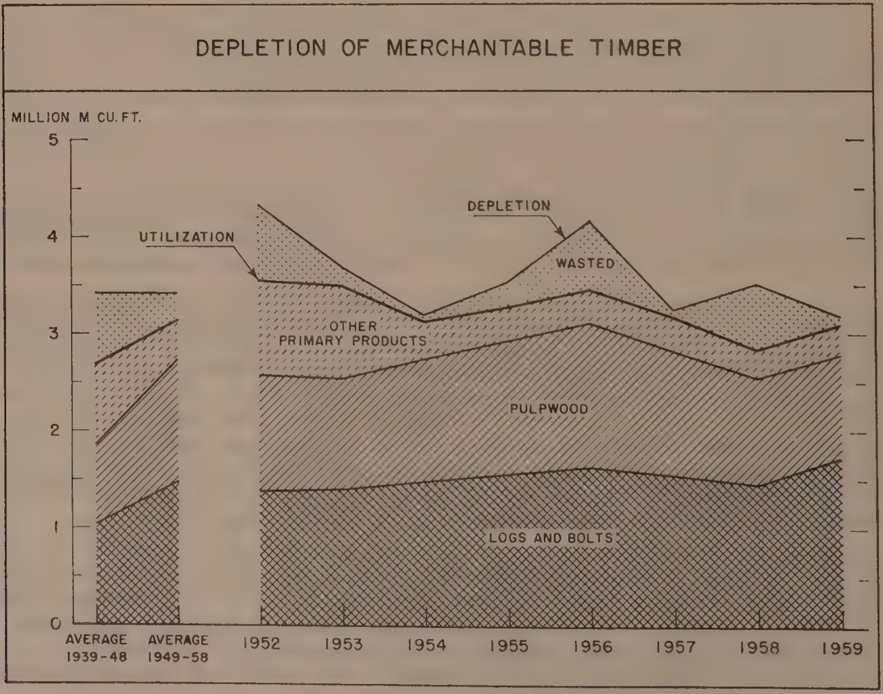
The more efficient utilization of cut timber is an important factor related to forest depletion, for there is little doubt that in the past too high a percentage of the sawn log was discarded. However, changes of great significance have taken place recently in the uses of wood, permitting the utilization of sizes, qualities and species previously considered unmerchantable. The development and manufacture of rayon, cellophane and other products of the cellulose industry have extended the use of wood and the increasing production of plastic-wood products, fibre board and laminated wood has resulted in greater use of inferior grades of wood and species of trees and therefore in the more complete utilization of forest resources and the elimination of much waste.

3.—Average Forest Utilization and Depletion, 1958 and 1959, compared with Ten-Year Average 1949-58

Item	Usable Wood			Depletion		
	Average 1949-58	1958	1959 p	Average 1949-58	1958	1959 p
	M cu. ft.	M cu. ft.	M cu. ft.	p.c.	p.c.	p.c.
Products Utilized—						
Logs and Bolts—						
Domestic use	1,473,782	1,456,917	1,725,700[1]	43.1	41.4	54.1[1]
Exported	8,787	4,704	4,300	0.3	0.1	0.1
Pulpwood—						
Domestic use	1,078,071	975,642	968,400	31.5	27.7	30.3
Exported	164,749	109,337	94,100	4.8	3.1	2.9
Fuelwood	337,523	261,853	260,000	9.9	7.4	8.2
Other products	69,270	46,217	44,600	2.0	1.3	1.4
Total Utilization	3,132,182	2,854,670	3,097,100	91.6	81.0	97.0
Wastage—						
By forest fires	288,027	669,433	94,400	8.4	19.0	3.0
Total Depletion[2]	**3,420,209**	**3,524,103**	**3,191,500**	**100.0**	**100.0**	**100.0**

[1] Includes logs for pulping.

[2] The figure for depletion does not include wastage caused by agencies other than fire, such as insects, disease and natural mortality, for which no reliable estimates are available. It represents an average annual depletion of 7 cu. feet per acre on the accessible productive forest area; a much higher rate of depletion occurs on the more accessible occupied productive forest lands.



Forest Fire Statistics.—Forest fires in Canada during 1959 numbered 5,383 as compared with 7,817 during 1958 and an annual average of 5,804 for the years 1949-58. The area burned was only one-seventh of the 1958 figure and one-third the average area destroyed in the 1949-58 period. The amount of timber lost by fire was much less than in 1958 and, although the cost of combatting the fires was also less than in that year, it was greater than the average cost for 1949-58, probably as a result of higher wage and material costs. Newfoundland, Nova Scotia and Quebec all experienced heavier losses in 1959 than in 1958 but the situation was more favourable in the other provinces.

4.—Forest Fire Losses, 1958 and 1959, compared with Ten-Year Average 1949-58

Item		Average 1949-58	1958	1959
Totals, Fires	No.	**5,804**	**7,817**	**5,383**
Fires under 10 acres	"	4,585	6,429	4,436
Fires 10 acres or over	"	1,219	1,388	947
Area Burned	acres	**2,295,115**	**4,939,880**	**702,475**
Merchantable timber	"	339,457	733,571	91,861
Young growth	"	462,417	804,879	121,205
Cut-over lands	"	350,597	1,657,436	268,463
Non-forested lands	"	1,142,644	1,743,994	220,946
Average Size of Fire	acres	**395**	**632**	**130**
Merchantable Timber Burned—				
Large material (10 inches or over D.B.H.)	M cu. ft.	111,526	460,252	15,250
Small material (4 inches to 9 inches D.B.H.)	"	176,501	209,181	79,194
Estimated Values Destroyed[1]	$	**6,507,274**	**14,465,235**	**4,428,800**
Merchantable timber	$	3,668,961	7,613,445	1,086,165
Young growth	$	1,678,879	5,247,501	1,321,277
Cut-over lands	$	254,956	806,593	550,796
Other property burned	$	904,478	797,696	1,470,562
Actual Cost of Fire Fighting	$	**3,555,554**	**7,747,510**	**4,254,175**
Totals, Damage and Fire Fighting Costs	$	**10,062,828**	**22,212,745**	**8,682,975**
Area under protection	sq. miles	..	1,336,954	1,336,954

[1] Figures do not include such values as damage to soil, stream-flow, wildlife, recreation and tourist facilities.

5.—Forest Fire Losses, by Province, 1958 and 1959, compared with Ten-Year Average 1949-58

Item		Average 1949-58	1958	1959
Newfoundland—				
Forest fires	No.	181	128	217
Area burned	acres	19,756	2,615	34,234
Fire fighting cost and damage	$	100,668	2,267	251,434
Nova Scotia—				
Forest fires	No.	293	245	254
Area burned	acres	6,741	1,289	2,575
Fire fighting cost and damage	$	61,978	8,772	10,669
New Brunswick—				
Forest fires	No.	226	140	261
Area burned	acres	8,782	5,460	5,612
Fire fighting cost and damage	$	134,433	54,689	54,073
Quebec—				
Forest fires	No.	986	377	669
Area burned	acres	194,991	6,893	94,889
Fire fighting cost and damage	$	1,459,607	79,542	2,212,206
Ontario—				
Forest fires	No.	1,362	1,520	1,005
Area burned	acres	101,585	36,040	5,211
Fire fighting cost and damage	$	1,956,279	1,008,539	382,041
Manitoba—				
Forest fires	No.	282	387	155
Area burned	acres	226,699	821,543	27,064
Fire fighting cost and damage	$	382,124	876,229	96,922

5.—Forest Fire Losses, by Province, 1958 and 1959, compared with Ten-Year Average 1949-58—concluded

Item		Average 1949-58	1958	1959
Saskatchewan—				
Forest fires	No.	151	244	169
Area burned	acres	125,291	119,260	6,444
Fire fighting cost and damage	$	150,059	345,794	237,206
Alberta—				
Forest fires	No.	218	464	469
Area burned	acres	423,362	230,993	87,959
Fire fighting cost and damage	$	2,739,186	4,308,852	2,045,318
British Columbia—				
Forest fires	No.	1,894	3,995	1,954
Area burned	acres	425,921	2,062,073	271,315
Fire fighting cost and damage	$	2,454,956	13,072,514	3,045,654
Federal Lands—				
Yukon Territory—				
Forest fires	No.	55	96	60
Area burned	acres	232,351	1,554,402	42,196
Fire fighting cost and damage	$	283,664	1,692,355	42,240
Northwest Territories—				
Forest fires	No.	60	71	78
Area burned	acres	514,820	85,293	110,845
Fire fighting cost and damage	$	273,597	606,802	277,611
National Parks—				
Forest fires	No.	35	40	21
Area burned	acres	3,897	1,404	9
Fire fighting cost and damage	$	16,407	9,386	1,693
Indian Lands—				
Forest fires	No.	58	105	53
Area burned	acres	10,903	12,607	14,001
Fire fighting cost and damage	$	49,598	146,763	24,424
Other Federal Lands (incl. military areas)—				
Forest fires	No.	4	5	18
Area burned	acres	7	8	121
Fire fighting cost and damage	$	272	241	1,484

According to the cause-of-fire classification given in Table 6, lightning again caused the largest number of individual fires in 1959, although the number thus caused was only a little more than half the total for 1958 and not much more than two-thirds the average for the 1949-58 period; of the total, lightning caused 16 p.c. in 1959, 21 p.c. in 1958 and an average of 19 p.c. for the 1949-58 decade. Railways also caused about 16 p.c. of the fires in 1959 and campers and smokers together caused 29 p.c. The 1959 percentage for "Miscellaneous known", which classification includes fires started as a result of such incidents as falling aircraft, broken power lines and motor vehicle mishaps, stood at a little over 14 p.c. of the total; this was the second highest percentage for this classification since the record began in 1918, reflecting the changing technological patterns in Canada.

6.—Forest Fires, by Cause, 1958 and 1959, compared with Ten-Year Average 1949-58

Cause	Average 1949-58		1958		1959	
	No.	p.c.	No.	p.c.	No.	p.c.
Campfires	881	15	970	12	766	14
Smokers	1,096	19	1,222	15	815	15
Settlers	568	10	604	8	472	9
Railways	790	14	1,529	20	843	16
Lightning	1,126	19	1,620	21	847	16
Industrial operations	271	5	339	4	324	6
Incendiary	157	3	263	3	206	4
Public works	109	2	131	2	91	2
Miscellaneous known	542	9	835	11	769	14
Unknown	264	4	304	4	250	4
Totals	**5,804**	**100**	**7,817**	**100**	**5,383**	**100**

Section 4.—Forest Administration, Research and Conservation

Subsection 1.—Federal Forestry Program

Administration.—The Federal Government is responsible for the protection and administration of the forest resources of the Yukon and Northwest Territories and of other federal lands such as the National Parks, forest experiment stations, military areas and Indian reserves. The Federal Government also administered (until repealed in 1960) the Canada Forestry Act, which provided among other things authority for operation of forest experiment stations and forest products laboratories. The chief responsibility of the Federal Government in the field of forestry is to carry out research in problems affecting the forests and their development, conservation and more effective utilization. Until the passage of new legislation late in 1960, these functions were carried out by the Forestry Branch of the Department of Northern Affairs and National Resources and the Forest Biology Division of the Department of Agriculture. The latter was responsible for all research relating to forest entomology and forest pathology, while the Forestry Branch conducted research in forest economics, in all phases of forest research including silviculture, forest management, forest ecology, tree breeding, forest inventory methods and forest fire protection, and in forest products research.

The passing of the Canada Forestry Act in 1949 was an event of great significance to federal-provincial relations in the field of forestry, as authority was given to the then Minister of Mines and Resources to "enter into agreements with any province for the protection, development or utilization of forest resources". Since that time agreements have been entered into with most of the provinces for federal financial support for programs of forest inventories, reforestation and the purchase of capital assets used in forest fire protection. The history of the federal-provincial agreements and their relation to the Canada Forestry Act is described in a special article appearing in the 1956 Year Book, pp. 459-466.

In the summer of 1958, the first representations leading to the formation of a separate Department of Forestry were made by the Canadian Lumbermen's Association, which submitted to the Minister of Northern Affairs and National Resources a brief urging that an extension service be established to bring the results of forest products research to the attention of small operators. Improved informational services were requested and also additional research in specific fields relating to sawmilling and woodworking industries. In the same year, the Canadian Pulp and Paper Association also presented a brief to the Minister asking that forest research programs of the Federal Government be increased substantially.

The House of Commons Standing Committee on Mines, Forests and Waters studied the forestry situation exhaustively during two sessions of Parliament, hearing evidence from many organizations and individuals from all parts of Canada. Its report in 1959 stressed the importance of the forest industries to the nation and recommended in part that a separate Forestry Department should be established and that the functions of the Forestry Branch of the Department of Northern Affairs and National Resources and those of the Forest Biology Division of the Department of Agriculture should be coordinated in the recommended Forestry Department. The Speech from the Throne on Jan. 14, 1960 asked for authorization for "the establishment of a new department to be concerned with affairs relating to the forests of Canada and their most effective utilization and conservation". The Department of Forestry Act received Royal Assent on Aug. 1, 1960 and became effective upon Proclamation on Oct. 1, 1960.

The Department of Forestry Act sets out the duties, powers and functions of the Minister of Forestry as extending to and including "all matters over which the Parliament of Canada has jurisdiction relating to the forests of Canada". The Minister is to consult with and inaugurate conferences of provincial or municipal authorities, universities, representatives of industry or other interested persons. The Act provides for the establishment of forestry experimental areas on federal lands and for regulations for the protection, care and management of such areas. It provides also for the submission to Parliament of an annual report on activities of the Department for each fiscal year and for various operational matters. The Act repeals the Canada Forestry Act, 1949.

The *Forest Research Branch* conducts both basic and applied research related to forest management and forest fire control. The basic research is to gain an understanding of the natural processes governing the behaviour of forests and forest fires, while the applied research is concerned with the application of such knowledge in the development of methods for the establishment, growing, harvesting and protection of forests.

Forest management research deals with silviculture, ecology and forest mensuration and inventory. Many of the silvicultural studies involve (*a*) assessing the factors responsible for the success or failure of natural regeneration following various cutting methods and treatment of seed beds, (*b*) comparing different methods of seeding and planting, and (*c*) determining the effects of different methods of intermediate cutting on the development of residual trees and stands. Studies are made of growth and yield and of successional changes in most of the important forest types. Techniques used in mensuration are constantly under review and study; new methods are tested and developed. Application of silvicultural techniques as well as research in regulation of cut and in methods of protection are aimed at determining how forests may be maintained at the highest levels of production. The relationships between forest growth and site are being studied with a view to the assessment of long-term productivity. The requirements of light, temperature and moisture that will produce optimum conditions for growth and development are being determined for the seedlings of many important species of trees. The physiological processes of growth and reproduction are under investigation for a limited number of species. In tree breeding, superior strains are selected or developed and there is a continual improvement in propagation and breeding techniques. Research in forest soils is directed toward determining the relation of tree growth and nutrition to chemical and physical properties of the soil.

Research in forest inventory methods is of increasing importance because of greatly expanded programs of forest inventories being conducted in most provinces and in the northern Territories. Data from air photographs are correlated with field observations to develop new techniques of timber estimating. The use of stand volume tables and various methods of field sampling are being investigated and compared. Research is continuing in methods for measuring tree images and tree shadows to determine heights, crown widths, canopy density and other data from photographs taken in different seasons of the year under various conditions. The use of large-scale photography of sample areas is also being investigated and studies are being made in the identification of species and sub-types.

Adequate protection of forests against fire is of vital importance in Canada. The Forest Research Branch works in full co-operation with provincial forest services in almost all phases of forest fire control. Major contributions of the Branch have been in the fields of fire danger measurement and fire control planning. Methods for classifying forest fuel types, for using prescribed fires in hazard reduction, for determining the efficiency of fire control organizations, and for preparing and analysing individual fire reports are being investigated. Studies are being continued in the use of chemicals for fire suppression and pre-suppression, and of fire fighting equipment and techniques. Another important field of endeavour is the study of lightning and other fire causative agencies.

The *Forest Entomology and Pathology Branch* conducts research on forest insects and diseases and maintains regional laboratories and field stations in all principal forested regions of Canada. The forest insect and disease survey is a Canada-wide project conducted by the Branch in co-operation with the provincial forest services and forest industries, the primary objective of which is to maintain an annual census of forest insect and disease conditions, and to detect and predict the occurrence of outbreaks. Results of the survey are made immediately available to the owners and operators of forest lands for use in planning salvage programs and directing control operations or other measures to reduce damage. An important secondary objective of the survey is extension of knowledge of the insects and fungi affecting forest trees, including their life histories, ranges of distribution, and host-parasite relationships.

The research programs of the regional laboratories are designed to lead to comprehensive understanding of the biology and ecology of the more destructive forest insects and fungi, and the causes of fluctuations in abundance or severity of damage in time and place. Problems under intensive study include insect defoliators, leaf diseases, sucking insects, dwarf mistletoes, stem cankers, bark- and wood-boring beetles, trunk and root decays, tip- and root-boring insects, and diseases of tree seedlings in forest nurseries. A recent development is the initiation of investigations of virus diseases of forest trees. Laboratory research on development, physiology, nutrition and taxonomy complements the field ecological studies of insects and fungi in the forest environment. Problems of broad national importance in insect pathology, cytology and genetics, bioclimatology and chemical control are investigated by Branch sections, which are appropriately staffed and equipped for research in these special fields.

The Forest Entomology and Pathology Branch also carries out experiments in control, utilizing cultural techniques, chemicals and biological control agents including parasites, predators and insect pathogens. Technical advisory services are provided in evaluating possibilities of eradication or control, or other applications of research results. Recent examples include recommendations for reduction of seedling losses in forest tree nurseries through cultural techniques and chemical applications; the co-operative organization of cull surveys to improve forest inventories; consultation with local authorities on the Dutch elm disease problem in New Brunswick, Quebec and Ontario, designed to limit spread and damage through control of the disease vectors and sanitation procedures; and technical co-operation with provincial governments and industrial agencies in the organization of spraying operations against the spruce budworm in New Brunswick and Quebec, and the black-headed budworm, the saddle-backed looper, and ambrosia beetles in British Columbia.

The *Economics Division* is responsible for research in the economics of forestry in addition to providing basic statistical services to the Department as a whole and co-operating in international forestry matters of concern to Canada.

Research in the economics of forestry provides the basis for intelligent decisions on the economic aspects of managing forest lands and of utilizing their products and services. It embraces the whole range of economic activities that relate to the use of forest resources, including the fields of consumption, distribution and processing of the products of the forest. In addition, it provides the information that must be considered to determine the best means of using the forest resources in conjunction with other resources in order to maximize the total net returns to be obtained from the economy.

Emphasis is being placed on the economics of production and a greatly expanded program in market research is being developed. Economists will be established in the four regions for the purpose of providing greater flexibility in carrying out regional economic studies.

The *Forest Products Research Branch* undertakes research embracing every aspect of forest products except that relating to the paper field. This research is directed toward obtaining the necessary background information and data on the properties of Canadian woods, developing new and better uses for wood products, improving manufacturing processes, and effecting a more complete utilization of wood substances available from the forest.

Two laboratories, located at Ottawa and Vancouver, undertake the research program of the Branch. Several phases of research are concentrated at the larger Ottawa laboratory while the work at the Vancouver laboratory is concerned mainly with British Columbia and Alberta species. Close relationship with the forest products industries and the users of timber is maintained to ensure that the research work of the Branch is of maximum national benefit.

The Industrial Liaison Service comprises suitably located field representatives who visit sawmill and other woodworking plants in their respective areas to keep industry aware of research development and technical advances that may assist in the solution of industrial problems. These field representatives also undertake liaison duties to keep the Branch laboratories informed of field problems on which research would be of value.

Research activities include the determination of the physical, mechanical and chemical properties of wood and their relation to adaptibility in use; studies of the factors affecting the quality of wood and of manufactured wood products; determination of the factors that cause wood waste in logging and manufacturing; research and investigation on the preservative treatment and painting of wood and the use of wood for the manufacture of cellulose, wallboards, alcohols, organic acids, and extractives; studies to determine possible new economic and more valuable uses for woods; and research aimed at determining methods and means for the practical and economical utilization of all wood substances available from the annual timber harvest. Additional work includes the application of laboratory findings to the standardization of lumber grades, development and improvement of engineering designs in wood, and the development of timber specifications for building codes of Canada. By means of numerous technical publications and through other channels, continuous effort is devoted to the widespread dissemination of research results.

Pulp and Paper Research.—The Pulp and Paper Research Institute of Canada is a corporation supported jointly by the Canadian pulp and paper industry, the Federal Government and McGill University. In its laboratories at Pointe Claire, Que., which were provided by the Federal Government, research is carried out in the whole broad field of pulp and paper processing, from the growth and harvesting of the forests through the various chemical and mechanical manufacturing processes to the properties of end-products, including the improved utilization of both liquid and solid wastes. Further details are given at pp. 488-489.

Subsection 2.—Provincial Forestry Programs

All forested land in provincial territory, with the exception of the minor portions in National Parks, forest experiment stations, military areas and Indian reserves (see Table 2, p. 28), is administered by the respective provincial governments. The forestry program of each province is outlined below.

Newfoundland.—Geographically, the Province of Newfoundland has two separate regions—the Island, and Labrador on the mainland. The productive forested land of the Island is estimated at 12,999 sq. miles and of Labrador at 62,575 sq. miles, a total of 75,574 sq. miles. Only 578 sq. miles are classified as farm woodlots. Most of Labrador's forests are leased but are as yet virtually untouched.

A large part of the forest land in the interior of the Island is leased, licensed or owned by paper companies, but a three-mile-wide belt along most of the coastline is retained as unoccupied Crown land for the purpose of providing firewood, construction material, fencing material, etc., for the local population. Within this coastal forest belt, every household has legal right to cut 2,000 cu. feet of wood a year for domestic use. This form of cutting is generally without any control or restriction but a policy is being introduced whereby cutting in certain 'management areas' is controlled by forest officers.

Commercial timber-cutting on unoccupied Crown lands has been by permit since 1952; permits for amounts up to 120 cords per person are issued by the field staff but permits for larger quantities must be approved by the government. This type of permit is almost always preceded by advertising of standing timber for sale by tender, the timber involved usually being over-mature or damaged by fire, insects or storms.

Unoccupied Crown land is divided into 21 Forest Inspector Districts averaging 281 sq. miles in size. The Island is also divided into three Forest Regions, each with a Supervisor who is in charge of Inspectors and is responsible to the Chief Forester. Twenty-seven well-equipped forest fire depots and 21 lookout towers, connected by radiotelephones, are operated within the province by the Newfoundland Government, while the two paper companies, the Newfoundland Forest Protection Association and the Canadian National Railways operate many others and offer a most efficient service contribution. Two aircraft, equipped with water-dropping tanks, are stationed at Gander throughout the fire season; they patrol forest areas and transport equipment and crews when necessary. Helicopters are occasionally used as well. In 1960, the provincial government established forest fire protection facilities in Labrador for the first time. Four depots were set up and two aircraft and a helicopter located there on charter during the fire season. Permanent forestry staff of the provincial government number 75, augmented by 100 seasonal men during the forest fire season. The two paper companies maintain their own fire protection organizations.

Forest research for Newfoundland is performed by the federal Department of Forestry. No reforestation is done in the province.

Prince Edward Island.—The Forestry Division of Prince Edward Island, formed under the Department of Industry and Natural Resources in 1951, became part of the Department of Agriculture in 1955.

Almost all of Prince Edward Island's woodland is privately owned, so that the Forestry Division is concerned mainly with planting, woodlot management and fire protection. A small nursery has been established jointly with the Federal Government to deal with the Island's needs and many people take advantage of seedlings supplied by this Division at reasonable cost to re-stock barren areas. The Federal Government pays half the cost of reforesting waste lands.

In proportion to its size, Prince Edward Island exports a great deal of pulpwood. This export, combined with the fuelwood and lumber cut each year, led the Forestry Division to inaugurate a program designed to educate the owner in the proper care and management of his woodlot.

Fire protection does not constitute too great a problem. Wooded areas are scattered in patches throughout the province and, since a network of roads makes all woodlots accessible, equipment can be brought to the scene of a fire quickly and easily.

Research is limited mainly to reforestation problems and these are studied in the provincial nursery.

Nova Scotia.—The land area of Nova Scotia is 20,402 sq. miles. Of that area, 16,389 sq. miles are classed as forested, 92 p.c. of which is regarded as productive. For Canada as a whole, 91 p.c. of the forested land is held by the Crown in the right of the federal or provincial governments, but in Nova Scotia only about 22 p.c. is so held.

The provincial Crown lands are administered by the Department of Lands and Forests through a professional staff of 27 persons. In addition, there are about 26 professional foresters associated with the forest industry in the administration of privately owned lands. The Department administers the Small Tree Conservation Act on all lands and is responsible for forest fire suppression on all lands, regardless of tenure. Forest fire detection is facilitated by 27 observation towers and an aerial patrol service, all integrated with land vehicles and headquarters by radio and telephone communication systems. Well-equipped fire suppression crews and rangers are stationed throughout the province.

The forest industry is of prime importance to the economy of Nova Scotia. There are some 500 sawmills of all sizes, one large newsprint mill and two large pulp mills in operation; a new chemical pulp mill is under construction in the Port Hawkesbury–Mulgrave area. These mills, along with the pulpwood export trade, pitprop production, boxwood and barrel production, as well as other facets, use an equivalent of 1,375,000 cords of wood annually.

An active reforestation program has been under way since 1926. Although not as ambitious an undertaking as in some parts of Canada, the program is being expanded in areas where there are less fortunate circumstances relative to natural regeneration. There are five producing nurseries in operation and another under development. Forest management programs include the construction of access roads into Crown land timber areas under the Federal-Provincial Agreement. Timber, pulpwood and Christmas trees are sold through public tender and cutting is under the recommendations of the district foresters of the Department of Lands and Forests. Inventory surveys, regeneration studies and experimental cuttings are conducted on Crown lands.

Forest research is carried on by Federal Government agencies and the Nova Scotia Research Foundation (see pp. 387-388). Investigations involve stand improvements, cutting methods, and insect and disease activities. Extension projects include an active fire prevention campaign, a motion picture program for schools, distribution of information on forest and wildlife conservation, promotion of the Christmas tree industry, and preparation of articles for general distribution, for newspapers and for magazines.

New Brunswick.—More than 85 p.c. of the area of New Brunswick is classed as productive forest, of which the Crown, in right of the province, owns about one-half. About 2 p.c. is owned by the Federal Government and the remainder is privately owned. The report of a provincial forest inventory, part of the national forest inventory, was published in 1958. The productive forest area is estimated at 23,808 sq. miles and the total volume of wood in merchantable sizes at 16,900,000,000 cu. feet; of the latter, coniferous species make up 71 p.c. and deciduous species 29 p.c.

Protection from forest fires, the first requirement for forest conservation, is mainly the responsibility of the Department of Lands and Mines which also carries out duties in connection with game management and protection, colonization, parks, camp grounds and picnic sites, and the administration of provincial Crown lands. A large-scale aerial spraying program to protect balsam fir and spruce from the spruce budworm has been carried on since 1952 by a Crown company sponsored by the federal and provincial governments and representatives of the forest products industries.

Timber licences issued by the province authorize operators to cut and remove forest products in accordance with forest management plans and cutting permits. Stumpage dues are paid to the province when products are cut by the licensees.

New Brunswick does not maintain a forest research organization but co-operates with the federal Department of Forestry in that field. The University of New Brunswick also has undertaken a small number of forest research projects in co-operation with the National Research Council, the provincial government, and other interested organizations. In the autumn of 1960, the New Brunswick Department of Agriculture employed a forestry engineer as a first step in developing and expanding a provincial tree farm program.

Quebec.—The forested lands of the Province of Quebec cover an area of 378,080 sq. miles extending from its southern borders to latitude 52° north, between the frontier of Labrador in the east, and the Eastmain River Basin in the west. Of this total, 89,131 sq. miles are classed as occupied productive forest land, 23,175 sq. miles of it privately owned, 227 sq. miles federal Crown forests and the remainder provincial Crown land on which leases and permits have been granted. Thus, approximately 289,000 sq. miles of the forest lands of Quebec are inaccessible or vacant. About two-fifths of the annual cut comes from privately owned lands.

The limits reserved for forest industries are administered by the Department of Lands and Forests and the technical work such as inventory, reforestation, superintendence of cutting, control of culling, verification of plans for development, collection of stumpage dues, etc., is the responsibility of the Forest Service. These limits are either leased by auction after public notice has been given or assigned under a special law. The price of the licence is fixed by auction or by Order in Council subsequent to specific legislation. The government reserves the right to dispose of the water powers situated on the limits leased.

A tree-felling permit, which is valid for one year, is renewable if the holder has complied with the conditions imposed; it may be transferred with the authorization of the Minister of Lands and Forests. The lessee of a limit must pay a ground rent in addition to the price of licence and must forward, three months before the cutting begins, a plan of operations. Wood cut must be measured by a licensed culler and at the end of the operations the limit holder must produce a sworn statement of quantities cut.

The Forest Service endeavours to promote the use of silvicultural methods among the owners of farm woodlots and small forest areas.

Quebec's forest protective system comprises three organizations—the Protective Service, the protective associations and the non-affiliated lease holders or owners. The Protective Service is a government body established within the Department of Lands and Forests in 1924 to enforce legislation and regulations governing forest fire protection and to protect vacant Crown lands, township reserves and colonization territories. The protective associations, of which there are six, are syndicates of lease holders and of owners who have availed themselves of their right to form an association to satisfy the law which compels them to protect their limits or private forests of 2,000 acres or over. Members assume operating expenses in proportion to the area owned by each but the Department assumes half the costs of fire fighting incurred by the associations. The third group is composed of lease holders and of owners who prefer to discharge their obligations personally as far as forest protection is concerned. They enjoy the same privileges and their obligations are the same as those imposed upon the associations.

To perpetuate the forestry program of the province, the Department has established a number of nurseries, the first at Berthierville in 1908. This nursery has three sections: one wooded with a variety of valuable species of mature age, one serving agricultural purposes, and another devoted to forestry experiments and the cultivation of trees for reforestation or ornamentation. More recently, the Grandes Piles nursery and the Gaspe nursery were organized and there are also nurseries in the following counties: Abitibi-East, Témiscamingue, Saguenay, Îles de la Madeleine, Rimouski, Roberval, Rivière du Loup, Témiscouata and Chicoutimi. Their object is the preparation of plants for reforesting nearby districts. 'Floating' nurseries, supervised by the engineers of the Forest Extension Bureau and intended especially for growing reforestation plants for private properties, are located at Pont Rouge, Sherbrooke, Scott, St. Hyacinthe, Victoriaville, Mont Joli and St. Pascal. The plants are supplied free of charge on request. A dynamic reforestation program is now under way in the province, with an ultimate objective of 10,000,000 plants yearly on private grounds.

The Bureau of Silviculture and Botany and the Forestry Products Laboratory, both subsidized by the Department, are actively engaged in scientific research work in the forestry field. The Bureau studies the possibilities of utilizing spoil-heaps of gold and asbestos mines, tests the fertility of soils in the spruce groves, classifies forests according to type of vegetation, and studies growth and yields of stands in the timber limits by means of permanent research spots. The Forestry Products Laboratory, located at the Duchesnay Forestry Station, studies developments in the field of chemical conversion of wood and in the use of forestry by-products.

Ontario.—Steady development in the management of the province's forest resources continued throughout the year ended Mar. 31, 1960. Forest land under the jurisdiction of the Department of Lands and Forests, including 42 Agreement Forests and five Nursery Forests, was divided into 220 areas, each covered by a management plan; this was a considerable increase over the 125 plans of the previous year. Included in the 220 areas were 72 Crown Management Units with plans prepared by the Departmental staff, consisting of 66 management plans in operation covering 51,613,522 acres, and six areas with 1,694,856 acres under inventory. Also included were 101 Company Management Units with plans prepared by licensees, consisting of 62 plans in operation covering 39,385,600 acres, 20 new plans under analysis comprising 8,643,840 acres, and 19 plans in process of preparation covering 16,231,680 acres.

Although there was a reduction of 41,200,000 cu. feet in the amount of lumber cut from Crown lands as the woods industry continued to cut back operations (more than 92 p.c. of the reduction being caused by a drop in pulpwood production), the cut of such species as hemlock, cherry and oak showed slight increases. There was almost nine times as much softwood cut as hardwood—264,252,540 cu. feet and 31,554,930 cu. feet, respectively. Timber revenues to the Department in 1960 maintained the decade's annual average, which was more than double that of the ten years prior to 1951.

Preliminary reports to Dec. 1, 1960 documented 956 forest fires with 31,386 acres burned over. More than one-third of the fires took place in July and accounted for 27,575 acres of the destroyed area. Sioux Lookout district where 20,303 acres were burned over was hardest hit, followed by Geraldton district where 4,772 acres were burned over. Lightning caused 310 fires and 646 were caused by the carelessness of forest users. However, it is noteworthy that the proportion of man-caused fires in 1960, at 68 p.c., was the second lowest for the past 15 years (in 1955, 59 p.c. of the fires were man-caused). This trend, despite increased use of the forests, points in part to the success of the Department's work in fire prevention education through radio, television, publications, contests, lectures, films and advertising. Although the 1960 average of 33 acres destroyed per fire was considerably higher than the 1959 average of five acres, the latest ten-year average (1951-60) of 71.2 acres destroyed by each fire was an encouraging decrease from the 117.5-acre average recorded for 1941-50.

Detecting fires in their infancy and confining them to small areas has been accomplished largely by the Department's continual improvement in equipment and fire fighting methods; many of these advancements have been employed in other parts of the world. Water-dropping from aircraft is still one of the most effective means of fire containment in use. Late in 1959, work commenced on the development of float-type cargo-dropping racks for *Beaver* and *Otter* aircraft, designed to replace manual dropping through the camera hatch. The Air Service Section of the Department, with its fleet of 46 aircraft, spent 4,053 hours on fire-ranging tours, more than one-third of the total hours logged in all its operations, which included transporting personnel on administrative duties, fish and wildlife services, forest management and mercy flights.

During the year ended Mar. 31, 1960, 41,682,125 units of nursery stock were furnished through the Reforestation Section, an increase of more than 8,000,000 over any previous year. There were 23,448,118 trees planted on Crown land, 13,809,125 on private land and 4,114,129 on lands managed for counties, townships and conservation authorities. Tree seeds were collected, processed and sown, and nursery operations continued to develop toward an output of approximately 60,000,000 units per annum.

Areas managed by the Department in agreement with counties, townships and conservation authorities increased by 7,348 acres during 1960 to reach a total of 143,312 acres, contained in 42 Agreement Forests. These constituted 22 county forests with 94,512 acres, six township forests with 1,774 acres and 14 conservation authorities with 47,026 acres. Amendments to the Forestry Act provided that a conservation authority in a municipality may receive a grant for the purpose of assisting in the acquisition of land for forestry purposes.

Silviculture—reproducing, tending and improving forest crops—was carried out under two main phases: (1) artificial regeneration—more than 91,000,000 trees were planted during the past five years and a program to assess tree survival was started; and (2) stand improvement—which continued the establishment of demonstration units in various regions to study silvicultural characteristics of commercial trees and the training of forest management personnel. Stand improvement work was done on 12,227 acres during 1959-60. Forest management improvements required research into cutting practices, thinning by chemical and mechanical means, and the use of fire for silvicultural purposes.

Investigations were carried on in evaluation of site features of soil, climate and vegetation as factors affecting forest production and multiple land use. Reforestation procedures were advanced with research into culling and grading of nursery stock, root pruning, comparative studies of seedlings versus transplants, and specialized planting techniques. Experiments in tree breeding and genetics have shown that some hybrids between Himalayan and native white pine are standing up very well under repeated infection with blister rust, Ontario's major tree disease. Portions of seeds from the Chapleau area were irradiated with increasing doses of X-ray at the Atomic Energy of Canada Limited laboratories as part of a long-term project to determine whether irradiation will induce mutations of white pine resistant to blister rust.

During 1960, 20,157 sq. miles of the province were surveyed by air as part of the program to re-photograph the present exploitable forest area before 1967.

Manitoba.—The forests of Manitoba are administered by the Forest Service, a Branch of the Department of Mines and Natural Resources. The Service is headed by a Provincial Forester and the province is divided into four Forest Districts—Northern, Southern, Eastern and Western—each with a District Forester in charge. The Whiteshell Forest Reserve, which is an important recreational area, is also supervised by a Forester. Each Forest District is subdivided into Forest Ranger Districts of which there are 40, each in charge of a Forest Ranger.

The cutting of mature timber is governed by timber sale, licensed timber berth, pulpwood lease, or timber permit. Timber sales are disposed of by public auction and cover periods of from one to seven years; timber berths cover certain areas granted before 1930, the date of the transfer of the natural resources from the Federal Government to the province; pulpwood leases are granted over an area of 2,748 sq. miles; and timber permits are granted to settlers and small operators at appraised rates for a period of one year or less. On the basis of a forest resources inventory completed in 1956 and other information, working plans with annual allowable cuts on a sustained-yield basis have been brought into operation in the more accessible areas.

Fire protection is one of the most important activities of the Forest Service. Fires are detected by air patrol, lookout tower and road patrol and rapid communication is maintained within the Service by radio and telephone. The Air Service transports men and equipment to fires in areas beyond the reach of roads. The main air base is at Lac du Bonnet and summer air bases are maintained at The Pas, Norway House and Thicket Portage. The total area under fire protection is about 97,000 sq. miles.

Regeneration of the forest is dependent mainly on natural means although 5,250,000 trees were planted during the past five years as part of the Federal-Provincial Agreement (see p. 477). The Pineland Forest Nursery is operated at a point near Hadashville to supply planting stock for denuded areas of Crown land and to furnish farmers with shelter-belt and woodlot seedlings.

The province has no forestry research organization but co-operates with several federal services which maintain two research areas. The Department co-operates fully with federal authorities in investigating and controlling forest damage resulting from insects and diseases. The Forest Service also carries out public education in the fields of fire prevention and forest conservation. Use is made of all usual methods including radio, television, newspapers, signs, talks to school children and club members, film tours, etc.

Saskatchewan.—The forests of Saskatchewan, including watered areas, are located mainly in the northern half of the province and cover 147,360 sq. miles or 58 p.c. of the total area. Provincial forests constitute approximately 92 p.c. of all forest land in the province and are managed and developed by the Forestry Branch of the Department of Natural Resources.

The Forestry Branch, consisting of six divisions—Administration, Fire Control, Forest Management, Forest Research, Inventory and Silviculture — is responsible for developing and evaluating forest policies and management programs based on the findings of inventory and research. The responsibility for carrying out such policies and programs is borne by the Regional Administration Branch. For purposes of resource administration, the province is divided into five regions, each under the supervision of a Regional Superintendent. The regions are subdivided into Conservation Officer Districts which vary in size according to resource base and population to be served.

A major responsibility of the Forestry Branch is the development of techniques in the prevention, detection and suppression of forest fires. A network of 89 lookout towers equipped with two-way radios is maintained throughout the province and is supplemented by five aircraft on regular patrol duty during the high-hazard periods. A group of smoke-jumpers has been trained to parachute on remote fires. This unit is in constant readiness during the fire season and takes immediate suppression action which it maintains until relieved by overland crews. Northern Saskatchewan's communication system, with more than 850 two-way radio sets in operation in towers, vehicles, aircraft and forest camps, plays a vital role in the detection and suppression of forest fires. These activities have been assisted recently by the use of a helicopter.

Alberta.—The 158,529 sq. miles of provincial forest in Alberta are administered by the Forests Division of the Department of Lands and Forests at Edmonton. The Division is composed of five forestry branches under a Director of Forestry—Administration, Forest Protection, Forest Management, Forest Surveys, and Radio.

The Administration Branch supervises all branches, maintains general control over revenue and expenditure, deals with personnel and conducts a Forestry Training School which offers in-service training for forest officers and other employees.

The Forest Protection Branch has charge of the protection of the forests and of all field personnel. For ease of administration the forested area has been divided into seven Divisions, each responsible for the forest within its boundary. These Divisions are composed of Ranger Districts in which all activities are supervised by the district forest officer responsible to his divisional superintendent. The divisional staffs include: forest superintendent, assistant forest superintendent, divisional forester, chief ranger, mechanical foreman, chief check scaler, assistant check scaler, divisional clerk, assistant clerk, radio operator, stenographer, and seasonal help such as standby fire crews, forest lookout men and general labourers and construction crews. These employees are responsible for fire prevention and suppression, supervision of logging and milling operations, timber cruising, and construction and maintenance of forestry projects.

The functions of the Forest Management Branch include the approval and acceptance of management and annual operating plans prepared for other Crown lands, proper land use, proper disposal of Crown timber and the direction of field officers in the administration of all contracts related thereto. This extends to all phases, including acceptance of applications, cruising of timber, drawing up of contracts, periodic inspections of areas to assure proper logging and utilization practices, scaling of products cut, collection of dues and reforestation of areas denuded through cutting, fire, etc.

The Forest Surveys Branch maintains the provincial forest inventory and prepares and maintains detailed inventories by management units; prepares long- and short-term management and protection plans; provides timber application forest-type maps; conducts other work pertaining to photogrammetry and forest-cover maps; and provides technical drafting and mapping services to the Forest Service and general public.

Development and maintenance of communications is the function of the Radio Branch. Central stations are maintained at Edmonton and Calgary with smaller stations located at divisional headquarters, lookout towers and ranger districts. A number of portable, mobile and airborne stations combine with the fixed stations to form a flexible and comprehensive communications network for both fire detection and suppression operations.

Conservation of 9,000 sq. miles of forest comprising the Rocky Mountains Forest Reserve is administered by a joint provincial-federal agency—the Eastern Rockies Forest Conservation Board with offices at Calgary. The area is composed of three forests which are subdivided into ranger districts. The Superintendent in charge of each forest is responsible to the Director of Forestry; his decisions are based on policies formed by the Board, which comprises one federal and two provincial members. This Reserve includes the headwaters of the main prairie river system.

Research in general is carried out by the federal Department of Forestry, which maintains the Kananaskis Experiment Station.

British Columbia.—The productive forest land of British Columbia in 1958 was inventoried at 208,411 sq. miles and, in addition, there were 59,227 sq. miles of forest land classed as non-productive. Of the productive area, immature timber occurred on 95,739 sq. miles; 84,275 sq. miles carried matured timber with a total volume of 318,000,000,000 cu. feet; 28,397 sq. miles, including areas of recent burn, cut-over or windfall not yet re-stocked, were unclassified.

For administrative purposes, the province is divided into five Forest Districts with regional headquarters at Vancouver, Prince Rupert, Prince George, Kamloops and Nelson. Further decentralization of authority is effected by subdivision of the Forest Districts into Ranger Districts. There are approximately 25 Ranger Districts in each Forest District. Twelve directional, servicing or policy-forming divisions constitute the head office of the Forest Service at Victoria.

Vigorous efforts are being made to bring British Columbia's forest resources under sustained-yield management and the forest industries are making definite progress toward total utilization of their raw materials. The problem is urgent despite the fact that, with a present annual cut of approximately 1,100,000,000 cu. feet, the total inventory would appear sufficient to support present needs in perpetuity. One of the more spectacular results of sustained-yield administration has been the swinging of a greater proportion of the annual forest harvest to the interior of the province. For many years, the over-cut coast (wet belt) forests have accounted for from 65 p.c. to 80 p.c. of the total forest cut each year. More recently, however, the interior percentage has risen and in 1959 almost 50 p.c. of the total cut originated there. For all practical purposes, the entire interior forest is publicly owned; the great majority of the privately owned, leased or licensed forests are on the coast.

Several systems of timber disposal are in effect. The most publicized is the Tree Farm Licence, which constitutes a contract between the government and a company or individual whereby the latter agrees to manage, protect and harvest an area of forest land for the best possible return, in exchange for the right to the timber crop on the area in perpetuity. Provincial Forests, Public Working Circles, and Sustained-Yield Units are the governmental equivalent of the Tree Farm Licence with the timber, when it is ready for cutting, being disposed of by public auction. Management, silviculture, road-building and protection on such areas are the responsibility of the Forest Service. Other tenures of lesser importance are Tree Farms, Farm Woodlot Licences, and Timber Sales.

Protection of the forest, particularly from fire, is still a major problem although the public is becoming more cautious. Improved fire fighting techniques, the use of aircraft for patrol and transportation, employment of helicopters, and a gradually expanding system of lookouts are employed. However, the province suffered two disastrous fire seasons in the past three years. In 1958, which was the worst season on record, 4,120 fires were reported and in 1960, 4,113 fires. The cost of fire fighting in these two years was $5,988,000 and $5,188,000, respectively. Close liaison with the federal Department of Forestry, which maintains laboratories in Vernon and Victoria, provides information about insect and fungal enemies of the forest.

Subsection 3.—The Pulp and Paper Research Institute of Canada*

The Pulp and Paper Research Institute of Canada is a centre of research and learning concerned with virtually every aspect of the production and use of pulp and paper products. It was established in 1913 as a branch of the Dominion Forest Products Laboratories and in 1927 was reorganized under the joint sponsorship of the Canadian Pulp and Paper Association, the Federal Government and McGill University. The Institute staff carries out fundamental research and some applied research in the fields of woodlands operations and pulp and paper mill operations. In addition, in co-operation with McGill University, it trains postgraduate students who are working toward master's and doctorate degrees in physical chemistry, wood chemistry, or chemical and mechanical engineering, and whose theses subjects lie in fields of interest to the pulp and paper industry.

The Institute has occupied, since 1927, a building on the McGill campus erected by the pulp and paper industry and in 1958 a new building was completed at Pointe Claire on the western outskirts of Montreal by the Government of Canada in lieu of its former annual financial grant. The building houses Institute staff and facilities formerly located in temporary quarters. The Institute's facilities include: organic and physical chemistry, physics, hydraulics and engineering laboratories; pilot plants for chemical pulping, pulp and chip refining and waste liquor pyrolysis; a greenhouse and other facilities for woodlands research; an extensive library; shops and special facilities for pulp and paper testing and for photographic and microscopic (both light and electron) studies of wood, pulp, and paper. It has a staff of about 155.

The Institute's research activities comprise a basic program, contract research, and technical services. The basic program is supported by assessments from the Maintaining Membership (some 42 companies, representing more than 100 mills and about 95 p.c. of the total production of the Canadian industry) and by a basic grant from the Canadian Pulp and Paper Association. It comprises research of interest to the industry broadly, as distinct from that which is the concern of a single company only or of a small segment of the industry.

The projects in the basic program range from studies of the growing seedling in the forest to the converted pulp and paper product, and fall into seven broad classifications: woodlands, mechanical pulping, chemical pulping, paper making, process control, product quality and waste utilization. The emphasis is primarily on fundamental and exploratory studies. The Institute is regarded as a centre for broad, long-range and uninterrupted studies of basic principles which individual pulp and paper companies would find difficult to justify in terms of immediate applied objectives. Moreover, the Institute is a centre of highly specialized equipment and manpower which individual companies would not normally have.

In addition to its permanent staff, the Institute, in co-operation with McGill University, has some 25 graduate students working on fundamental projects in the background of pulp and paper technology, which also serve as their theses topics. The head of the Institute's Wood Chemistry Division, who is also the E. B. Eddy Professor of Industrial and Cellulose Chemistry at McGill, directs graduate student work on such subjects as the behaviour of the materials of which wood is made—cellulose, lignin and hemicelluloses. The head of the Institute's Physical Chemistry Division, also a Research Associate in the McGill Chemistry Department, directs graduate student work in the physical chemistry of fibres, e.g., the forces which cause cellulose fibres in a water suspension to mat together to form paper. The head of the Institute's Chemical Engineering Division, an Associate Professor of Chemical Engineering at McGill, directs graduate students in such chemical studies as the rate of drying of droplets and fibres. These Division Heads are assisted by other members of the Institute's staff who likewise hold concurrent honorary positions at McGill.

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The Institute also undertakes contract research projects on a cost reimbursement basis for individual companies or groups of companies in the pulp and paper or allied fields. The larger of these co-operative contracts have been concerned with problems of particular segments of the Canadian pulp and paper industry, such as the investigation into the causes of corrosion in alkaline pulping equipment and the recent study of the rapid deterioration of paper machine wires.

A further function of the Institute is to provide a broad range of technical information services to the industry and, to some extent, to other industries and the public. It maintains a specialized library for this purpose which supplies bibliographies, abstracts, translations and critical reviews to the scientific staff and the industry.

Section 5.—Forest and Allied Industries

This Section is concerned with the many industries employed in the felling of timber in the forest and its transformation into the numerous utilitarian shapes and forms required in modern living. The basic industries provide the raw material for sawmills, pulp and paper mills and for a wide range of secondary industries that convert the products of the basic industries into more highly manufactured goods such as veneers and plywoods, sash and doors, furniture, and a vast range of industries using wood in any form in their processes. These industries, especially the pulp and paper industry and the lumber industry, contribute substantially to the value of the export trade of Canada and thereby provide the exchange necessary to pay for a large share of the imports purchased from other countries, particularly the United States.

Subsection 1.—Woods Operations

In connection with operations in the woods, the forests provide not only the raw materials for the sawmills, pulp mills, veneer mills, charcoal, excelsior and other plants, but also the logs, pulpwood and bolts for export in the unmanufactured state, and fuel, poles, railway ties, posts and fence rails, mining timber, piling and other primary products that are finished in the woods ready for use or export. A number of minor forest products help swell the total, such as Christmas trees, cascara bark, balsam gum, resin, etc.

Estimates of woods operations attempt to give actual production figures for all items and are based partly on provincial forest service data for volume. Value, as currently estimated, excludes transportation costs.

7.—Value of Woods Operations, by Product, 1955-59

Product	1955	1956	1957	1958	1959
	$	$	$	$	$
Logs and bolts	393,860,833	443,888,332	409,226,544	311,746,286	344,424,102
Logs for pulping	38,985,790	33,581,745	25,827,900	21,489,973	32,114,964
Pulpwood	330,490,498	385,889,223	314,407,202	253,663,933	288,129,343
Fuelwood	34,361,586	37,097,923	36,656,139	29,105,108	26,519,755
Poles and piling	17,082,451	23,219,870	20,930,794	8,146,102	7,495,040
Round mining timber	3,432,932	3,615,647	3,032,954	2,568,121	2,136,621
Fence posts	2,071,988	2,286,222	2,644,749	2,369,596	2,955,812
Hewn ties	627,082	626,481	664,683	317,262	235,131
Fence rails	248,359	292,183	326,877	275,820	267,970
Wood for charcoal	370,947	847,847	502,170	459,750	448,000
Miscellaneous roundwood	408,275	130,445	102,759	803,355	1,514,855
Other products	7,631,973	8,026,684	8,731,727	7,665,202	9,474,407
Totals	**829,572,714**	**939,142,602**	**823,054,498**	**638,610,508**	**715,716,000**

8.—Production and Consumption of Wood Cut in Woods Operations, 1950-59, and by Product 1959

Year and Product	Production			Consumption		
	Quantity Reported or Estimated	Equivalent Volume of Merchantable Wood[1]	Total Value	Quantity Reported or Estimated	Equivalent Volume of Merchantable Wood[1]	Total Value
		M cu. ft.	$		M cu. ft.	$
1950	...	3,023,465	613,045,910	...	2,761,909	558,104,116
1951	...	3,436,463	821,021,875	...	2,922,883	698,113,030
1952	...	3,205,383	763,188,754	...	2,834,719	705,980,443
1953	...	3,078,066	704,538,888	...	2,903,661	705,452,273
1954	...	3,122,313	728,369,907	...	2,924,832	693,755,990
1955	...	3,280,070	829,572,714	...	3,093,255	746,954,072
1956	...	3,463,304	939,142,602	...	3,083,626	813,590,871
1957	...	3,172,166	823,054,498	...	2,918,522	767,606,567
1958	...	2,854,670	638,610,508	...	2,837,204	680,015,210
1959	...	**3,186,387**	**715,716,000**	...	**3,175,452**	**782,771,247**
Logs and bolts M ft. b.m.	8,573,080	1,650,176	344,424,102	8,692,663	1,738,533	386,194,327
Logs for pulping "	829,281	165,856	32,114,964	[2]	[2]	[2]
Pulpwood cord	12,649,796	1,075,233	288,129,343	13,535,000	1,150,475	349,827,000
Fuelwood "	3,116,424	249,314	26,519,755	3,113,315	249,065	28,019,835
Poles and piling No.	974,802	14,622	7,495,040	848,674	12,730	8,223,651
Round mining timber cord	101,976	8,670	2,136,621	67,265	5,718	1,543,732
Fence posts No.	10,443,214	13,072	2,955,812	7,905,693	9,487	3,004,164
Hewn ties "	146,177	731	235,131	146,177	731	235,131
Fence rails "	1,410,423	1,411	267,970	1,410,423	1,411	267,970
Wood for charcoal cord	36,500	2,920	448,000	36,500	2,920	484,355
Miscellaneous roundwood cu. ft.	...	4,382	1,514,855	...	4,382	1,624,405
Other products[3] $	...	...	9,474,407	...	...	3,346,677

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[1] In estimating the annual drain on Canada's forest resources, certain converting factors have been used, each of which represents in cubic feet the quantity of merchantable wood used to produce one unit of the material in question. The factor for logs and bolts for the British Columbia coastal region is 175 and for the remainder of Canada 200. Other factors: pulpwood and round mining timber 85, fuelwood and wood for charcoal 80, poles and piling 15, hewn railway ties 5, fence posts 1.2 and fence rails 1.

[2] Converted to rough cords and included with pulpwood.

[3] Chiefly Christmas trees but also includes balsam gum, cascara bark, etc.

9.—Equivalent Volume of Solid Wood Cut and Value of Products of Woods Operations, by Province, 1957-59

Province or Territory	Equivalent Volume of Solid Wood			Value of Products[1]		
	1957	1958	1959	1957	1958	1959
	M cu. ft.	M cu. ft.	M cu. ft.	$	$	$
Newfoundland	97,660	83,959	96,695	23,731,594	22,149,929	22,771,333
Prince Edward Island	9,065	10,565	10,594	1,531,244	1,919,497	1,430,067
Nova Scotia	104,859	83,283	89,612	22,506,594	18,345,674	18,441,249
New Brunswick	201,847	172,215	172,602	46,468,732	40,961,013	33,059,821
Quebec	905,446	816,797	877,158	231,929,256	192,950,612	215,287,177
Ontario	565,010	483,544	531,528	155,355,873	110,138,247	131,939,580
Manitoba	60,337	50,377	51,766	10,634,425	7,496,163	7,947,414
Saskatchewan	55,088	41,561	44,621	7,967,381	5,598,816	6,362,446
Alberta	125,938	107,612	135,003	20,304,609	16,061,077	20,274,322
British Columbia	1,042,561	998,827	1,173,965	301,797,845	221,885,140	257,650,252
Yukon and N.W.T.	4,355	5,930	2,843	826,945	1,104,340	552,339
Canada	**3,172,166**	**2,854,670**	**3,186,387**	**823,054,498**	**638,610,508**	**715,716,000**

[1] Includes value of forest products other than wood.

10.—Principal Statistics of Woods Operations, 1954-59

Year	Employees (man-years)[1]	Salaries and Wages	Cost of Materials	Net Value of Production	Gross Value of Production
	No.	$	$	$	$
1954	127,000	428,000,000	84,395,514	643,974,393	728,369,907
1955	149,000	506,000,000	100,458,945	729,113,769	829,572,714
1956	132,015	472,035,290	97,808,409	841,334,193	939,142,602
1957	119,944	430,804,865	89,941,837	733,112,661	823,054,498
1958	67,327	338,283,658	68,594,657	570,015,851	638,610,508
1959^{p}	82,551	347,405,901	57,003,561	658,712,439	715,716,000

[1] Prior to 1958, employment statistics included those individuals employed in the transportation of products from the woods to the manufacturing plant or user. In order to report only employment in woods operations, and to avoid duplication of data collected elsewhere, 1958 and subsequent employment statistics have been compiled to conform with this principle.

Subsection 2.—The Lumber Industry

The manufacture of sawn lumber is the second most important industry in Canada depending on the forest for its raw materials.

The total number of sawmills, tie, shingle, lath, veneer, stave, heading and hoop mills and mills for cutting-up and barking or rossing of pulpwood, reports of which were compiled for 1959, was 5,684 as compared with 5,769 in 1958. Mills sawing less than 15,000 ft. b.m. are excluded but account for less than one-half of 1 p.c. of the total lumber production. Employees numbered 48,657 and wages and salaries amounted to $144,759,203. Logs, bolts and other materials and supplies of the industry were valued at $313,434,108, the gross value of production was $571,813,381 and net value $248,525,472.

Lumber production in Canada reached its maximum in 1955 at 7,920,033,000 ft. b.m., decreasing in 1956 and 1957 to 7,739,603,000 and 7,099,758,000 ft. b. m., respectively. Increases were recorded in 1958 and 1959 to 7,179,080,000 and 7,591,419,000, respectively. Value of lumber produced in the years 1955 to 1959 decreased from $541,563,241 in 1955 to $490,539,826 in 1959.

11.—Quantity and Value of Lumber Production and Value of All Sawmill Products, by Province, 1958 and 1959

Province or Territory	Lumber Production				Value of All Sawmill Products	
	Quantity		Value			
	1958	1959	1958	1959	1958	1959
	M ft. b.m.	M ft. b.m.	$	$	$	$
Newfoundland	28,882	37,862	1,731,512	2,244,181	1,897,327	2,414,542
Prince Edward Island	7,497	7,945	443,726	464,583	504,601	525,124
Nova Scotia	198,521	220,542	12,196,570	13,456,113	14,121,372	15,719,935
New Brunswick	236,373	308,287	15,472,343	20,083,519	18,118,105	22,732,964
Quebec	910,513	1,038,362	63,680,655	71,582,603	76,362,970	84,822,528
Ontario	583,315	620,960	46,231,485	49,247,579	58,238,031	59,989,722
Manitoba	39,499	36,971	1,991,796	1,809,208	2,204,101	1,966,362
Saskatchewan	64,045	54,032	3,358,271	2,813,518	3,598,838	3,030,883
Alberta	254,987	314,258	12,657,181	15,590,714	14,684,784	17,325,351
British Columbia	4,849,965	4,948,585	301,734,115	312,987,838	356,104,461	363,026,000
Yukon and N.W.T.	5,483	3,615	403,096	259,970	454,769	259,970
Canada	**7,179,080**	**7,591,419**	**459,900,750**	**490,539,826**	**546,299,359**	**571,813,381**

12.—Quantity and Value of Lumber Cut, by Kind, 1957-59

Kind of Wood	Quantity			Value		
	1957	1958	1959	1957	1958	1959
	M ft. b.m.	M ft. b.m.	M ft. b.m.	$	$	$
Spruce	2,225,512	2,167,763	2,499,900	131,434,495	123,988,463	144,020,425
Douglas fir	1,870,872	2,110,225	2,045,031	122,568,519	131,629,032	130,096,158
Hemlock	984,680	970,194	959,363	59,737,169	57,672,413	60,244,478
White pine	386,140	309,727	333,779	34,577,543	27,661,653	29,869,673
Cedar	442,674	549,566	526,856	35,655,061	45,980,093	43,350,522
Yellow birch	166,746	148,399	145,622	15,183,513	13,834,874	13,723,434
Jack pine	222,368	235,558	290,672	13,828,905	14,205,745	17,069,716
Maple	125,184	108,032	108,893	10,925,643	9,351,296	10,001,891
Balsam fir	242,856	208,106	250,253	14,936,079	12,783,474	15,283,464
Red pine	43,645	36,778	36,331	3,780,997	3,210,332	3,054,203
Other	389,081	334,732	394,719	23,599,778	19,483,375	23,825,862
Totals	**7,099,758**	**7,179,080**	**7,591,419**	**466,227,702**	**459,900,750**	**490,539,826**

13.—Quantity and Value of Lumber, Shingles and Lath Produced, 1950-59

Note.—Figures from 1908 are given in the corresponding table of previous Year Books beginning with the 1931 edition.

Year	Lumber		Shingles		Lath	
	Quantity	Value	Quantity	Value	Quantity	Value
	M ft. b.m.	$	squares	$	'000	$
1950	6,553,898	422,480,700	3,191,589	31,807,753	123,118	1,134,741
1951	6,948,697	507,650,241	2,982,362	27,977,418	104,872	1,042,196
1952	6,807,594	483,195,323	2,424,818	19,269,747	111,595	1,237,227
1953	7,305,958	494,385,993	2,610,068	19,897,877	155,595	1,686,581
1954	7,243,855	482,912,005	2,710,654	24,039,162	140,655	1,512,400
1955	7,920,033	541,563,241	2,896,080	29,795,687	149,663	1,613,497
1956	7,739,603	539,261,627	2,798,599	28,775,812	142,992	1,511,153
1957	7,099,758	466,227,702	2,258.452	19,921,267	110,064	1,184,097
1958	7,179,080	459,900,750	2,323,583	20,527,156	106,734	1,149,608
1959	7,591,419	490,539,826	2,209,714	20,519,315	135,720	1,517,987

Lumber Exports.—Exports of planks, boards and square timber are given in Chapter XX on Foreign Trade.

Subsection 3.—The Pulp and Paper Industry

The manufacture of pulp and paper has been the leading industry in Canada for many years and the postwar development of the industry has more than kept pace with the vast industrial growth of the nation. Pulp and paper stands first among all industries in net value of shipments, in exports, in total wages paid and in capital invested. It is the largest consumer of electric energy and the largest industrial buyer of goods and services, including transportation, in the land. The industry has a newsprint output more than three times that of any other country and provides about 45 p.c. of the world's newsprint needs.

There are three classes of mills in the industry. In 1959, 27 were making pulp only, 26 were making paper only and 74 were combined pulp and paper mills.

The industry includes several forms of industrial activity: operations in the woods with pulpwood as a product, the manufacture of pulp and paper of all kinds, and the manufacture of paperboards. Some of the important pulp companies operate sawmills to utilize the larger timber on their limits to the best advantage, and some lumber manufacturers divert a portion of their spruce and balsam logs to pulp mills. Only a small percentage of the pulpwood cut in Canada is exported in raw or unmanufactured form.

14.—Production, Consumption, Exports and Imports of Pulpwood, 1949-58

Year	Production of Pulpwood in Canada[1]			Canadian Pulpwood Used in Canadian Mills[1]	Canadian Pulpwood Exported Unmanufactured	Imported Pulpwood Used in Canada
	Quantity	Value	Average Value per Cord			
	cords	$	$	cords	cords	cords
1949	10,308,783	202,544,308	19.65	10,464,990	1,644,253	5,491
1950	13,424,358	280,837,687	20.92	11,406,688	1,782,134	28,220
1951	18,151,853	416,196,281	22.93	12,587,792	2,893,615	46,634
1952	14,755,089	346,802,085	23.50	11,960,014	2,529,353	31,060
1953	13,545,181	309,011,150	22.81	12,060,853	1,783,657	48,805
1954	14,739,571	323,800,478	21.97	12,875,978	1,826,193	105,030
1955	16,087,951	369,476,288	22.97	13,494,496	1,882,784	134,917
1956	17,469,334	419,470,968	24.01	13,843,711	1,953,470	188,144
1957	14,967,604	340,235,102	22.73	13,187,474	1,800,411	179,614
1958	12,759,136	275,153,906	21.57	12,477,330	1,286,314	146,835

[1] Given in terms of rough or unpeeled wood.

Pulp Production.—The manufacture of pulp, the second stage in this industry, is carried on by mills producing pulp only and also by paper manufacturers operating pulp mills in conjunction with paper mills to provide their own raw material. Such mills usually manufacture a surplus of pulp for sale in Canada or for export. Spruce, supplemented by balsam fir in the east and by hemlock in the west, is the most suitable species for the production of all but the best types of paper.

The preliminary preparation of pulpwood is frequently carried on at the pulp mill but there are also a number of cutting-up and rossing mills operating on an independent basis, chiefly for the purpose of saving freight on material cut at a distance from the mill or on material intended for export. Pulpwood is measured by the cord (4′ by 4′ by 8′ of piled material). One cord of rough pulpwood contains approximately 85 cu. feet of solid wood, and one cord of peeled pulpwood 95 cu. feet.

The manufacture of 10,832,200 tons of pulp produced in 1959 entailed the use of 13,535,051 cords of rough pulpwood valued at $349,827,131 and the equivalent of 1,455,651 rough cords of other wood (i.e., sawmill chips, slabs and edgings, sawdust, butts, cores, etc.) valued at $25,185,120. The total value of materials used in the manufacture of pulp was $455,135,786.

15.—Pulp Production, Mechanical and Chemical, 1950-59

NOTE.—Figures for earlier years will be found in the corresponding table of previous Year Books.

Year	Mechanical Pulp		Chemical Fibre		Total Production[1]	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	$	tons	$	tons	$
1950	4,910,803	173,035,433	3,314,250	323,330,963	8,473,014	502,583,925
1951	5,172,465	213,953,064	3,814,086	503,997,803	9,314,849	727,880,005
1952	5,175,319	217,352,245	3,518,127	423,789,033	8,968,009	650,021,180
1953	5,122,597	209,899,639	3,663,289	406,114,975	9,077,063	624,865,504
1954	5,337,610	214,102,066	4,057,046	433,359,934	9,673,016	655,916,738
1955	5,466,925	218,557,773	4,359,226	465,149,732	10,150,547	693,402,831
1956	5,723,002	231,236,271	4,645,493	463,880,858	10,733,744	706,232,534
1957	5,574,233	227,668,164	4,526,667	468,067,374	10,425,295	706,194,649
1958	5,375,499	222,295,717	4,445,310	471,590,838	10,137,454	703,365,594
1959	5,655,701	229,655,697	4,837,328	504,613,400	10,832,200	744,940,432

[1] Includes screenings and unspecified pulps.

16.—Pulp Production, by the Chief Producing Provinces, 1950-59

Year	Quebec		Ontario		Canada[1]	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	$	tons	$	tons	$
1950	3,922,543	216,299,900	2,297,518	156,390,753	8,473,014	502,583,925
1951	4,282,568	298,100,313	2,484,551	219,571,231	9,314,849	727,880,005
1952	4,192,047	280,314,341	2,308,722	182,773,000	8,968,009	650,021,180
1953	4,163,068	265,937,385	2,323,509	177,713,471	9,077,063	624,865,504
1954	4,315,465	268,759,418	2,420,903	183,381,040	9,673,016	655,916,738
1955	4,491,139	280,171,743	2,602,298	196,235,632	10,150,547	693,402,831
1956	4,809,011	296,884,619	2,735,241	178,012,929	10,733,744	706,232,534
1957	4,605,853	286,727,250	2,746,177	207,305,585	10,425,295	706,194,649
1958	4,223,227	256,238,044	2,736,456	217,476,915	10,137,454	703,365,594
1959	4,374,156	263,463,635	2,758,176	213,333,340	10,832,200	744,940,432

[1] Includes production in other provinces; Prince Edward Island is now the only province in which there is no production.

Pulp Exports.—The chief market for Canadian pulp is the United States. For many years this market alone has absorbed between 75 and 90 p.c. of such exports.

17.—Exports of Pulp to United Kingdom, United States and All Countries, 1950-59

Year	United Kingdom		United States		All Countries	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	$	tons	$	tons	$
1950	117,921	13,128,894	1,694,444	191,005,507	1,846,143	208,555,549
1951	217,250	37,770,627	1,831,410	276,760,578	2,243,307	365,132,884
1952	210,685	35,208,295	1,588,978	225,082,376	1,940,579	291,863,498
1953	214,951	28,099,255	1,599,491	202,247,663	1,950,152	248,674,880
1954	270,946	34,486,399	1,669,782	206,435,403	2,180,416	271,418,005
1955	280,575	34,814,098	1,868,804	233,796,779	2,366,133	297,304,069
1956	244,164	29,762,920	1,919,634	245,080,531	2,374,013	304,536,497
1957	225,482	28,662,202	1,847,364	235,258,142	2,282,656	292,406,102
1958	216,147	24,666,398	1,832,521	239,874,495	2,219,314	285,448,649
1959	217,386	24,726,915	1,966,480	254,049,124	2,450,027	311,252,798

World Pulp Statistics.—Figures of production, exports and imports of pulp for certain countries of the world are shown for 1958 and 1959 in Table **18**. It is estimated that these countries produce over three-quarters of the world supply of pulp.

18.—Production, Exports and Imports of Pulp, by Leading Countries, 1958 and 1959

(Source: Canadian Pulp and Paper Association)

Country	1958			1959		
	Production	Exports	Imports	Production	Exports	Imports
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
Canada[1]	**10,306**	**2,219**	**54**	**10,837**	**2,450**	**65**
United States	21,734	515	2,103	24,257	653	2,432
Finland	3,376	1,481	—	3,459	1,608	1
Norway	1,413	744	24	1,524	779	40
Sweden	4,487	2,598	—	4,838	2,953	3

[1] Production figures differ slightly from DBS figures given in Table **15**, because of a different basis of calculation.

Paper Production.—During 1959 there were 100 establishments producing paper and paperboard in Canada. In addition to newsprint, Canadian mills have a highly developed production of fine paper, wrapping paper, tissues, paperboard and other cellulose products.

19.—Paper Production, by Type, 1950-59

NOTE.—Figures for earlier years will be found in the corresponding table of previous Year Books.

Year	Newsprint Paper		Book and Writing Paper		Wrapping Paper	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	$	tons	$	tons	$
1950	5,318,988	506,968,207	214,097	47,356,410	222,840	37,776,291
1951	5,561,115	564,361,193	253,081	63,790,259	257,332	49,664,005
1952	5,707,030	600,515,960	224,683	57,463,621	222,529	45,356,720
1953	5,755,471	633,408,019	246,513	61,451,545	238,111	49,028,911
1954	6,000,895	657,487,344	269,353	68,613,807	250,408	51,341,374
1955	6,196,319	688,338,369	301,352	74,904,349	263,915	53,998,859
1956	6,445,110	735,644,049	341,580	86,524,107	288,146	61,098,013
1957	6,361,651	729,009,081	335,037	86,990,136	277,208	60,402,276
1958	6,030,930	699,906,388	344,622	91,079,353	292,727	64,650,624
1959	6,351,112	730,455,460	381,779	101,927,846	330,189	71,318,172

Year	Paperboard		Tissue and Miscellaneous Paper		Totals	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	$	tons	$	tons	$
1950	876,894	92,531,711	179,216	25,521,207	6,812,035	710,153,826
1951	960,493	113,469,950	193,250	32,744,242	7,225,271	824,029,649
1952	874,582	106,066,622	172,976	28,702,185	7,201,800	838,105,108
1953	948,955	114,978,277	187,476	28,991,721	7,376,526	887,858,473
1954	940,196	117,172,691	188,755	30,975,427	7,649,607	925,590,643
1955	1,027,441	130,365,751	211,186	33,831,919	8,000,213	981,439,247
1956	1,173,087	147,967,340	218,862	39,258,846	8,466,785	1,070,492,355
1957	1,114,726	143,079,419	211,267	36,890,420	8,299,889	1,056,371,332
1958	1,188,650	152,810,753	224,364	36,193,082	8,081,293	1,044,640,200
1959	1,255,692	163,151,023	231,087	39,218,605	8,549,859	1,106,071,106

Quebec produced over 45 p.c. of the total paper made in 1959, Ontario over 28 p.c., British Columbia about 12 p.c. and Newfoundland, Nova Scotia, New Brunswick, Manitoba, Saskatchewan and Alberta the remaining 15 p.c.

20.—Paper Production, by Province, 1958 and 1959

Province	1958		1959	
	Quantity	Value	Quantity	Value
	tons	$	tons	$
Quebec	3,688,185	467,118,921	3,818,861	485,337,054
Ontario	2,355,221	329,282,955	2,430,913	342,043,159
British Columbia	828,864	100,724,925	1,048,432	126,164,615
Newfoundland, Nova Scotia, New Brunswick, Manitoba, Saskatchewan and Alberta	1,209,023	147,513,399	1,251,653	152,526,278
Totals	**8,081,293**	**1,044,640,200**	**8,549,859**	**1,106,071,106**

Newsprint Exports.—Total exports of newsprint from Canada in the years 1950–59 are given in Table **21**.

21.—Exports of Newsprint to United Kingdom, United States and All Countries, 1950-59

Year	United Kingdom		United States		All Countries	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	$	tons	$	tons	$
1950	19,095	1,861,980	4,724,937	463,155,927	4,938,069	485,746,314
1951	72,205	7,488,187	4,774,947	496,852,197	5,112,061	536,372,498
1952	131,005	14,575,722	4,850,962	534,372,859	5,327,430	591,790,209
1953	158,108	18,237,016	4,917,216	564,464,267	5,375,251	619,033,394
1954	250,185	28,639,166	4,866,649	558,633,675	5,521,530	635,669,692
1955	286,343	33,013,480	5,027,767	578,322,418	5,763,167	665,876,987
1956	347,905	41,531,514	5,218,911	615,941,551	5,967,194	708,384,822
1957	371,870	44,009,073	5,058,229	610,290,208	5,900,625	715,489,761
1958	389,000	46,476,034	4,880,985	590,167,442	5,682,832	690,209,468
1959	393,942	51,585,851	5,091,770	614,706.362	5,910,173	722,271,166

World Newsprint Statistics.—Since 1913 Canada has led the world in the export of newsprint. Figures for the leading producing countries for the two latest years available are given in Table **22**; 1939 figures are included for comparative purposes. The six countries listed accounted for 73 p.c. of the estimated world production in 1959, Canada contributing about 45 p.c.

22.—Estimated World Newsprint Production and Exports, by Leading Countries, 1939, 1958 and 1959

(SOURCE: Newsprint Association of Canada)

Country	Production			Exports		
	1939	1958	1959	1939	1958	1959
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
Canada[1]	**3,175**	**6,096**	**6,394**	**2,935**	**5,609**	**5,910**
United States	939	1,758	1,920	13	85	120
United Kingdom	848	703	750	42	117	91
Finland	550	695	698	433	633	635
Sweden	306	498	558	199	306	344
Norway	222	205	237	188	161	198

[1] Figures differ slightly from DBS figures given in Tables **19** and **21**, because of different bases of calculation.

Statistics of the Combined Pulp and Paper Industries.*—The manufacture of pulp, the manufacture of paper and the manufacture of products made of paper may, under certain conditions, be treated as three industries for they are frequently carried on in separate plants by entirely independent companies. The manufacture of basic stock and the converting of this paper into stationery and other highly processed paper products are often combined in one plant. This conversion of paper within the pulp and paper industry represents only a small part of Canada's production of converted paper and boards, the bulk of which is still made in special converting mills classified in other industrial groups.

The presence of these different combinations in one mill makes it difficult to separate many of the statistics relating to the manufacture of pulp, basic paper and converted paper products. All converting operations carried on in paper mills in this industry are attributed to the particular industrial group of converting plants to which they properly belong. Including manufacturing operations as far as the basic paper-making stage, there were altogether 127 mills in operation in 1959. Employees numbered 65,028 and their salaries and wages amounted to $322,311,304, as against 64,084 employees earning $307,415,615 in 1958. If the pulp made for their own use in combined pulp and paper mills is disregarded, the total value of materials and supplies used in the industry as a whole

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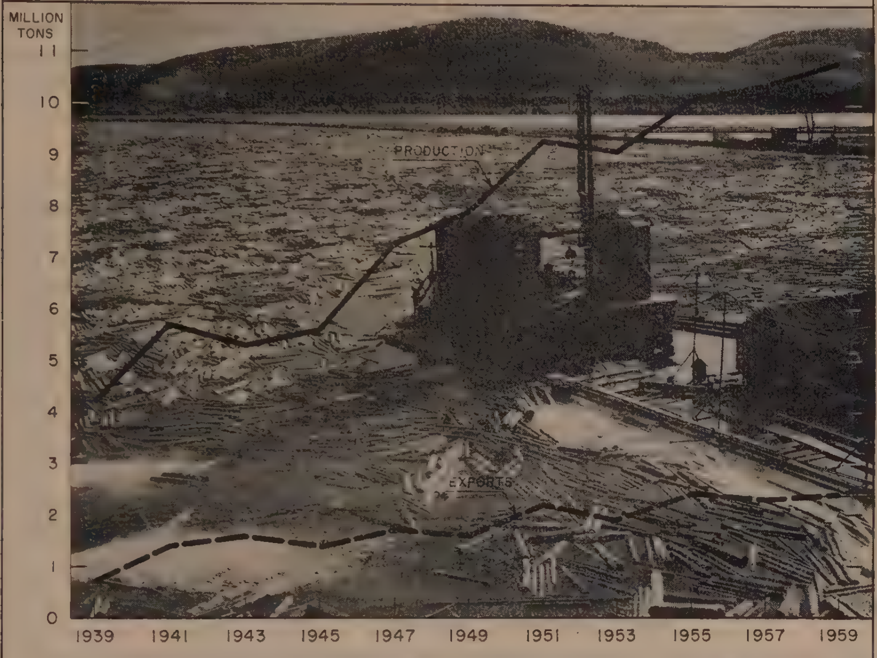
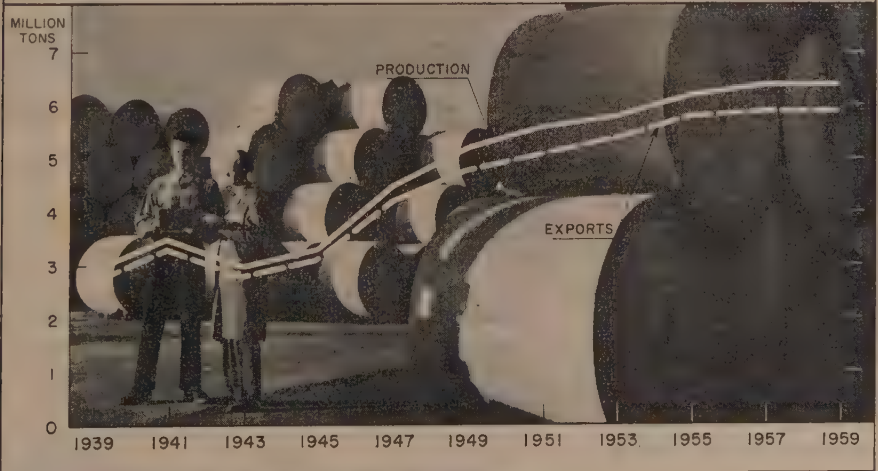
* See Chapter XIV for further particulars regarding the pulp and paper and paper-converting industries.

PRODUCTION AND EXPORTS OF PULP, 1939-59



PRODUCTION AND EXPORTS OF NEWSPRINT, 1939-59



amounted to $628,269,346 in 1959 compared with $597,804,877 in 1958; the selling value of factory shipments to $1,499,585,644 in 1959 and $1,394,679,180 in 1958; and value added by manufacture to $761,035,456 in 1959 and $702,950,789 in 1958.

In world trade, pulp and paper are generally Canada's main commodities—newsprint alone, over a considerable period, has brought Canada more export dollars than wheat, nickel or any other single commodity.* The United States market absorbs annually over 80 p.c. of all pulpwood exports and the same percentage of the pulp and the paper shipments of Canada.

Subsection 4.—The Veneer and Plywood Industries

The production of hardwood veneer and plywood in Canada is confined largely to the eastern provinces. Changes in manufacturing methods applied to hardwood plywood resulted in its adaptation to many uses, particularly to wall finishes for homes and other buildings.

Softwood veneer and plywood are produced almost entirely in British Columbia. Douglas fir is most commonly utilized because of the availability of large diameter logs of this species from which large sheets of clear veneer can be obtained. The use of synthetic resin adhesives is responsible for this product, which has become almost indispensable to the construction industry—for wall panels, concrete forms, roofing, sheeting and house sub-floors; for construction of silos, cribs and caissons; for box-car linings, bus bodies, trailers, and watercraft; for box panels and crate linings, case goods and core-stock for furniture; and for plywood-faced doors and many other items.

The heating of glued veneers in moulds by high-frequency electric fields (dielectric heating) permits the manufacture of shaped plywood which is now being used for furniture, radio cabinets and similar products.

Veneers of Canadian manufacture are not confined to species native to Canada. A number of imported woods of special decorative value are veneered successfully and provide the furniture industry with a wide choice of finishes. Exports of veneer and plywood produced in Canada increased in value from $969,256 in 1938 to a high of $32,351,005 in 1959.

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* For reasons given in Section 1, Part II of the Foreign Trade Chapter, gold is excluded from Canadian trade statistics.

23.—Veneer and Plywood Produced for Sale, by Type, 1957-59

Type	1957		1958		1959	
	Not over 1/20 Inch	Over 1/20 Inch	Not over 1/20 Inch	Over 1/20 Inch	Not over 1/20 Inch	Over 1/20 Inch
Veneer..................**M sq. ft.**	**524,127**	**500,755**	**591,444**	**522,463**	**745,547**	**514,311**
$	**13,529,436**	**4,622,407**	**15,041,689**	**5,411,859**	**21,471,254**	**5,323,477**
Domestic softwood.....M sq. ft.	6,240	432,605	7,234	457,051	6,779	444,526
$	71,857	2,977,350	93,830	3,546,471	89,380	3,517,631
Domestic hardwood....M sq. ft.	488,830	67,311	556,096	63,670	691,297	68,111
$	12,274,087	1,615,194	13,939,251	1,794,998	19,788,928	1,740,960
Imported wood.........M sq. ft.	29,057	839	28,114	1,742	47,471	1,674
$	1,183,492	29,863	1,008,608	70,390	1,592,946	64,886
Plywood (1/4 inch Basis).M sq. ft.	**1,257,962**		**1,532,177**		**1,532,175**	
$	**89,959,610**		**95,763,254**		**101,346,523**	
Domestic softwood.....M sq. ft.	1,031,386		1,276,766		1,231,339	
$	65,017,348		70,389,579		71,287,508	
Domestic hardwood....M sq. ft.	214,265		243,636		276,298	
$	22,116,570		22,517,968		25,075,147	
Imported wood.........M sq. ft.	12,311		11,775		24,538	
$	2,825,692		2,855,707		4,983,868	

Subsection 5.—The Wood-Using Industries

The wood-using group comprises thirteen industries,* other than sawmills and pulp mills, using wood as their principal raw material. Most of these industries obtain from the sawmills the wood they transform into planed and matched lumber, boxes, barrels, furniture, caskets and other manufactured or semi-manufactured products but the veneer and plywood and excelsior industries usually manufacture their products direct from logs and bolts.

This wood-using group does not include every industry into which wood enters as a raw material but only those producing commodities where the chief component is wood. There are a number of industrial groups in which wood is an important raw material as in the manufacture of agricultural implements, musical instruments, etc., and others such as the manufacture of some types of machinery in which wood is necessary but only in comparatively small proportion.

Wood is used indirectly in the manufacture of all-metal products such as wooden patterns and wooden foundry boxes in making metal castings. Wood in the form of barrels, boxes and other containers also enters into the distribution of commodities of all kinds.

In 1959 the wood-using group, comprising 4,130 establishments, gave employment to 75,132 persons and paid $243,102,524 in salaries and wages. The gross value of its products was $853,313,012 and the net value $396,273,502.

The importance of secondary industry in providing employment will be appreciated when it is noted that the number of employees in the wood-using group was more than 75,000, as compared with sawmills with 48,659 employees and pulp and paper mills with 65,028.

24.—Wood Used by Wood-Using Industries, 1956-59

Item		1956	1957	1958	1959
Sawn lumber	M ft. b.m.	2,468,620	2,238,659	2,144,037	2,346,955
	$	180,238,737	160,772,141	155,870,255	158,036,217
Sawlogs, veneer logs, flitches, butts and crotches.	M ft. b.m.	540,055	501,914	525,720	559,874
	$	48,526,195	44,223,163	43,422,674	47,727,529
Veneers and plywoods	$	36,717,541	34,703,630	35,303,469	35,398,254
Other wood used	$	8,011,668	6,924,556	7,167,332	6,977,057
Totals	$	**273,494,141**	**246,623,490**	**241,763,730**	**248,139,057**

Subsection 6.—The Paper-Using Industries

The paper-using group comprises three industries† engaged primarily in manufacturing commodities of paper and paperboard. Establishments engaged in printing, publishing, bookbinding and the allied graphic arts also consume large quantities of these materials but under the standard industrial classification adopted by the Dominion Bureau of Statistics in 1948 they are grouped separately.

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* Furniture; sash, door and planing mills; veneer and plywood; hardwood flooring; boxes, baskets and crates; wood-turning; coffins and caskets; cooperage; woodenware; lasts, trees and wooden shoefindings; beekeepers' and poultrymen's supplies; excelsior; and other wood-using industries.

† Paper boxes and paper bags; roofing paper; and miscellaneous paper goods.

Some paper-using establishments purchase paper as a raw material from the pulp and paper industry and merely subject it to some form of treatment to fit it for further manufacture in some other industry. This occurs in the manufacture of coated, sensitized or corrugated paper. Other firms purchase paper and subject it to some treatment to fit it for a definite final use such as in the manufacture of asphalt roofing or waxed wrapping paper. Another large group uses paper and paperboard as a raw material for conversion into paper bags, boxes, envelopes, laminated wallboard and other commodities.

The manufacture of containers and packages of various kinds has grown very rapidly since ways have been found of converting tough and cheap paper stocks into strongly made boxes which are replacing wooden crates and packing cases. Small attractive paper containers for use in the retail trade are now in common use and their manufacture constitutes an important branch of the paper-using industries.

Composition roofing and sheathing, consisting of paper felt saturated with asphalt or tar and in some cases coated with a mineral surfacing, is being increasingly used as a substitute for metal roofing, wooden shingles and siding materials. Wood-fibre building boards, some of which are produced by lamination in the paper-using industries, are now used extensively in construction, especially for insulating purposes, replacing lumber and wood lath.

The growth of the paper-using industries in Canada since 1923 reflects these developments. In 1923 the 152 establishments in this group employed 6,870 persons, distributed $7,442,102 in salaries and wages and produced goods valued at $31,760,948. In 1959 these industries comprised 432 plants, provided employment for 29,203 persons whose earnings totalled $108,053,202, and produced products worth $527,713,524.

Subsection 7.—Printing, Publishing and Allied Industries

The printing trades group is made up of five closely related industries: printing and publishing, comprised of publishers who operate printing plants; printing and bookbinding, including general or commercial printers and bookbinders; lithographing, comprised of plants specializing in that process; engraving, stereotyping and electrotyping, including photo-engraving; and trade composition or typesetting for printers. A sixth industry covering publishers of periodicals who do not print their own publications has been included since 1949. Although strictly speaking these publishers are not manufacturers, they are closely related to the printing trades which produce the plates, cuts, etc., and print newspapers, magazines, directories, yearbooks, almanacs, house organs and other periodicals for them.

In 1959 the manufacturing printing trades employed 67,770 persons whose earnings totalled $289,302,847. Their output was valued at $740,015,907 and the raw materials used and services received cost $231,078,138.

Periodicals valued at $302,533,784 accounted for 40.9 p.c. of the value of printed matter and other products, daily newspapers alone contributing $225,445,967. The value of periodicals is made up of $223,088,250 received from advertising and $79,445,534 received from subscriptions and sales of publications. In addition, the 1,462 publishers in the sixth industry reported revenues of $59,864,886 from advertising and $14,758,203 from sales of publications.

CHAPTER XI.—MINES AND MINERALS

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Section 1.—Canada's Mineral Industry 1959-60*

The value of production of the Canadian mineral industry reached a record high of $2,476,240,506 in 1960, about 2.8 p.c. above the previous record of $2,409,020,511 established in 1959. Each segment of the industry—metallics, industrial minerals and fuels—registered a gain over the previous year. Among the individual mineral commodities, copper, nickel and zinc of the metallics; asbestos, sulphur and titanium dioxide of the industrial minerals; and natural gas of the fuels all registered significant advances in value of output. Appreciable decreases in value of production of iron ore and uranium of the metallics group and of some of the structural materials in the industrial minerals sector almost counterbalanced production gains of other mineral commodities.

The production value of metallic minerals in 1960 was $1,403,987,738 ($1,370,648,535 in 1959), accounting for nearly 57 p.c. of the total value of Canada's mineral output; that of industrial minerals (non-metallics and structural materials) was $509,817,905 ($502,794,153 in 1959); and that of the fuels sector was $562,434,863 ($535,577,823 in 1959). Non-metallic mineral production in 1960 was valued at $194,860,357, up 9 p.c. from $178,216,641 in 1959, and that of structural materials was $314,957,548, down 3 p.c. from $324,577,512 in the previous year. The relative production values of metallics, industrial minerals and fuels have not changed appreciably in the past decade, during which time the total has risen from $1,045,450,073 in 1950 to $1,795,310,796 in 1955 and to $2,476,240,506 in 1960.

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* Prepared under the direction of Dr. Marc Boyer, Deputy Minister of Mines and Technical Surveys, Ottawa, in the following Divisions: Introduction and Subsections 1 and 3 by the Mineral Resources Division; Subsection 2 by the Mineral Processing Division, Mines Branch; and Subsection 4 by the Fuels and Mining Practice Division, Mines Branch.

Nickel, copper, uranium, iron ore, gold, zinc, lead and silver, in that order, were the leading metallic minerals in output value in 1960 and accounted for about 96 p.c. of the total value of the metallics output. Nickel developments, both domestic and foreign, presage an even more dominant position for Canadian nickel in the years ahead than the 70 p.c. of the Free World's total supply that has been contributed in recent years. Developments at Thompson in northern Manitoba will make that area, with its production capacity of 75,000,000 lb. a year, second in the world only to the Sudbury area with an annual capacity of 375,000,000 lb. Copper output was at an all-time high despite apparent over-supply in world markets which resulted in price declines in the last quarter of 1960. The market outlook at the year-end was uncertain because of abundant world supply and lower prices. Uranium production declined to 25,034,889 lb. of uranium oxide (U_3O_8) from the record output of 31,784,189 lb. in 1959. Canadian producers instituted a 'stretch-out' program for uranium in 1960 to allow some mines to remain in production until the end of 1966 to fill existing purchase contracts with the United States Atomic Energy Commission (USAEC). This action resulted from the announcement of Nov. 6, 1959 that the USAEC would not exercise its option to purchase Canadian uranium after Mar. 31, 1962.

Iron ore shipments to the United States decreased in the latter half of 1960 as a result of much-reduced steel operating rates in that country, so that total shipments in 1960 declined to 21,507,783 tons from the record high of 24,488,325 tons set the previous year. Shipments to the United Kingdom and Western Europe increased in both tonnage and value over those of 1959. Gold production increased slightly and, with a return to near-parity of the Canadian dollar in relation to the United States dollar at the end of 1960, the outlook for gold producers became more encouraging than it had been for many years. The Federal Government, in 1960, extended the Emergency Gold Mining Assistance Act three years to the end of 1963. The import quotas on unmanufactured lead and zinc, imposed by the United States Government on Sept. 22, 1958, continued throughout 1960. Despite the United States import restrictions and general world over-supply, Canadian production of both lead and zinc showed modest increases in 1960 over the previous year.

In the industrial minerals field, asbestos shipments increased to 1,140,538 tons valued at $118,700,998, about 10 p.c. above the previous year's record output. It appears that Russian asbestos production capacity now is about equal to Canada's. About 90 p.c. of Canadian production comes from 13 mines in the Eastern Townships of Quebec, the remainder from a mine at Matheson, Ont., and one at Cassiar, B.C. Canada is becoming a major producer of sulphur through the production of natural gas in Western Canada and now ranks fourth in the Free World production of sulphur in all forms, with total output in 1960 of about 1,000,000 tons. The value of titanium dioxide slag shipped from the electric smelter at Sorel, Que., reached a record $14,257,292, up from $8,507,149 in 1959. In addition, remelt iron valued at nearly $11,000,000 was recovered from the smelting of ilmenite at the Sorel smelter. The production of structural materials used in all types of construction was only slightly below the all-time record attained in 1959 and reflected a slight decline in building activity during 1960.

Since 1953, crude petroleum has been the largest single contributor to Canada's mineral output. Production in 1960, at 192,308,250 bbl. valued at $432,495,700, was only slightly above the 184,778,497 bbl. valued at $422,092,535 produced the previous year. Alberta continued to contribute about 70 p.c. of the total supply and Saskatchewan over 25 p.c. Natural gas production registered a 20.9-p.c. increase over that of 1959 to 504,452,000 Mcf. valued at $48,027,110. About 73 p.c. came from Alberta and most of the remainder from British Columbia, Saskatchewan and Ontario. Significant gas discoveries continued to be made in northeastern British Columbia and known gas fields in Alberta and Saskatchewan were extended. Coal output in 1960 increased slightly to 11,226,420 tons valued at $76,059,631 and reversed the trend of decreased shipments that had prevailed for many years. The average annual rate of decline in coal production since 1950 has been 10 p.c. because of increased use of petroleum products and natural gas for industrial and domestic purposes.

From a mineral resource and supply point of view, Canada gives every indication of becoming increasingly important. Canada has already attained a prominent, and sometimes dominant, position in world production of a large number of mineral commodities and now leads the Free World in the production of nickel, asbestos, platinum and platinum metals. It is second in uranium, zinc, aluminum, gold and cadmium; third in silver, iron ore, gypsum and barite; and stands high among world producers of copper, lead, titanium, cobalt, molybdenum, magnesium and several other commodities.

There is no scarcity of mineral raw materials in the world today but rather, in many instances, there is over-supply, particularly of iron ore, crude petroleum, copper, uranium, lead, zinc and sulphur. The greatest problem facing Canada's mineral industry in the years ahead will be that of competing on an economic basis with mineral industries of other countries, particularly those of South America and Africa, in supplying mineral requirements of the industrial economies of the United States, the United Kingdom, Western Europe and Japan. Increased efficiency at all levels of operation leading to lower costs of production, the diligent search for new markets, and close co-operation between government and industry give much promise for continuing enlargement and diversification of the Canadian mineral economy and a greater role for the mineral industry in Canada's over-all economy.

Subsection 1.—Metals*

Nickel.—Canada has long been the leading world producer of nickel and in 1960 accounted for about 70 p.c. of the Free World production capacity. Other major producers are New Caledonia, Japan and the United States. Cuba has two nickel processing plants both of which were nationalized in 1960 through expropriation by the Cuban Government resulting in a loss to the Free World market of an annual production capacity of 52,000 tons of nickel. No shortage of nickel resulted from the expropriations. The commencement of electrolytic nickel production at the Thompson property in northern Manitoba early in 1961 will maintain a balanced production, supply and demand pattern.

Nickel production in Canada during 1960 reached an all-time high of 213,641 tons valued at $312,738,234 and regained first place from uranium in the value of metallic mineral output. World demand during 1960 was extremely heavy though demand declined in the United States toward the end of the year. Nickel requirements in Western Europe continued strong all year, as steel operations remained at a high level.

The Canadian nickel industry is dominated by the mining and smelting operations of the Sudbury district of Ontario where The International Nickel Company of Canada, Limited and Falconbridge Nickel Mines Limited have mines and primary processing plants. International Nickel operates five mines: the Creighton, Frood-Stobie, Garson, Levack and Murray. It has smelters at Copper Cliff and Coniston, with the main product being nickel oxide sinter; by-product production includes copper, cobalt, the platinum metals, gold, silver, selenium, iron ore pellets and sulphur. Some sinter is used direct by industry and some is shipped to the Port Colborne, Ont., refinery where it is reduced, cast into anodes and electrolytically refined. Sinter is also shipped to the company's Mond Nickel refinery in the United Kingdom for reduction to metal by the carbonyl process. Rated 1960 production capacity of International Nickel was 165,000 tons of refined nickel. Falconbridge Nickel Mines Limited obtains ore from its Falconbridge, East and McKim mines in the Falconbridge area, and from the Hardy, Longvack and Fecunis mines in the Onaping area, all near Sudbury. Concentrates are smelted at Falconbridge to produce nickel-copper matte which is shipped to the company's refinery at Kristiansand, Norway. Current annual production capacity of Falconbridge is about 32,500 tons of electrolytic nickel.

Sherritt Gordon Mines Limited has mines at Lynn Lake in northern Manitoba and a refinery at Fort Saskatchewan, Alta. The refinery employs a pressurized ammonia leach process for recovery of nickel and cobalt from Lynn Lake concentrates. It also treats custom ore concentrates shipped from the mine of North Rankin Nickel Mines Limited at Rankin Inlet on the west shore of Hudson Bay. Giant Nickel Mines Limited, whose mine is near Hope, B.C., commenced shipments of nickel concentrates to Japan in 1960.

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* The figures for 1959 in this Subsection are final but those for 1960, as well as some pertaining to individual companies in both years, are subject to revision.

International Nickel's Thompson project in northern Manitoba, with an annual production capacity of 37,500 tons, began producing electrolytic nickel in February 1961. The Thompson operation includes mine, concentrator, smelter and an electrolytic refinery utilizing artificial nickel sulphide anodes. Company properties under development in the Sudbury area are the Crean Hill, Clarabelle open pit and the Copper Cliff North. The company has a $5,000,000 fluid-roast plant under construction at Copper Cliff. It also announced late in 1960 a further $50,000,000 program to triple the capacity of its iron recovery plant. Feed for this plant is pyrrhotite tailings from which the nickel is first removed by an atmospheric ammonia leach.

Falconbridge Nickel, in the Sudbury area, has commenced a $25,000,000 program which will include $5,000,000 for a 100,000-ton-a-year iron recovery plant; $10,000,000 to $15,000,000 for a shaft and development program at the large Strathcona deposit, and $7,500,000 to $10,000,000 for plant expansion and refinement designed primarily to improve efficiency of operation.

Official ore reserves in the Sudbury area in 1959 were 264,864,000 tons for International Nickel and 46,182,450 tons for Falconbridge Nickel. These reserves, with those of northern Manitoba, assure the Free World of sufficient nickel for many years.

Copper.—Canada's copper mining industry continued to expand in 1960. Production reached a record high of 438,383 tons valued at $264,336,899, exceeding the 1959 output by 43,114 tons and $31,234,086. The increase in production was attributable to new mine capacity, increased capacity at some existing mines and increased production from the nickel-copper mines of the Sudbury district of Ontario as a result of a strong world-wide demand for nickel.

Six smelters for the reduction of copper and copper-nickel ores and concentrates are operated in Canada. In the Sudbury area, The International Nickel Company of Canada, Limited operates smelters at Copper Cliff and Coniston, and Falconbridge Nickel Mines Limited produces copper-nickel matte at its Falconbridge smelter. Hudson Bay Mining and Smelting Company Limited at Flin Flon, Man., smelts concentrates from its mines in Manitoba and Saskatchewan and, since September 1960, smelts concentrates from the Lynn Lake, Man., mine of Sherritt Gordon Mines Limited. Ores and concentrates from the copper mines in Ontario, Quebec and Newfoundland are smelted at the Noranda smelter of Noranda Mines Limited and the Murdochville smelter of Gaspe Copper Mines Limited, both in Quebec. Copper refineries are operated by International Nickel at Copper Cliff and Canadian Copper Refiners Limited at Montreal East, Que. The capacity of the Canadian Copper Refiners' plant was increased to 236,000 tons of copper a year in 1960 and the combined production of the two refineries totalled 414,000 tons at the end of the year.

In Newfoundland, the Tilt Cove mine of Maritimes Mining Corporation Limited and the Buchans Unit of American Smelting and Refining shipped concentrates containing 13,875 tons of copper in 1960. Exploration parties were active at several of the old copper properties on the Burlington peninsula and Atlantic Coast Copper Corporation Limited started construction of a 1,000-ton-a-day mill at Little Bay. Production from the latter property started in early 1961.

Although no copper production from New Brunswick was recorded in 1960, underground development was started at the Wedge property and was resumed at the Heath Steele mine. The Consolidated Mining and Smelting Company of Canada Limited constructed a mining plant and started shaft sinking and underground development of the Wedge property 36 miles southwest of Bathurst. Heath Steele Mines Limited unwatered its mine north of Newcastle and resumed underground development and exploration of the orebodies.

Copper production in Quebec was 24,600 tons higher than in 1959, reaching a record 159,512 tons valued at $96,632,633. Operations were normal at the mines in the Noranda-Normetal-Val d'Or region and exploration in this area was stimulated by new discoveries near the Waite Amulet mine and in Joutel township north of Amos. The Chibougamau area in northwestern Quebec continued to increase in importance with one new producer in 1960 and development ore obtained from two large potential producers. Mill capacity was increased at the Chapais mine of Opemiska Mines (Quebec) Limited and the Merrill Island mine of Campbell Chibougamau Mines Limited. Copper Rand Chibougamau Mines Limited became the area's newest producer in January 1960 when the first ore was processed in its 1,500-ton-a-day mill. Gaspe Copper Mines Limited at Murdochville continued production at 6,500 tons of ore a day but copper output decreased because of lower grade mill feed. Exploration and diamond drilling were continued at several properties near Mattagami Lake in northwestern Quebec, stimulated by the Federal Government announcement that a railroad would be built into the area.

Higher production from the nickel-copper mines in the Sudbury district accounted for most of the 15,849-ton increase in Ontario's copper output in 1960, which amounted to 204,121 tons valued at $122,468,767. International Nickel and Falconbridge Nickel pursued active development programs on their properties in the Sudbury area. In the Manitouwadge district, Geco Mines Limited and Willroy Mines Limited maintained steady production from their copper-zinc mines and continued extensive programs of "on property" exploration and development. Temagami Mining Company Limited continued exploration, development and production at its mine near Temagami. After an extensive exploration program, Kam Kotia Porcupine Mines Limited started construction of an 800-ton-a-day mill at its mine in the Kamiskotia area, near Timmins.

Copper production in Manitoba and Saskatchewan declined to 44,300 tons in 1960 from the 48,481 tons in 1959. Hudson Bay Mining and Smelting operated the Flin Flon, Coronation, Birch Lake, Schist Lake and Chisel Lake mines. Ore reserves at Birch Lake were exhausted and the mine was closed in April. The Chisel Lake mine near Snow Lake, Man., started production in September at 1,400 tons a day. Hudson Bay is developing another mine and exploring two more properties in the Snow Lake district. Sherritt Gordon shipped copper concentrates from its Lynn Lake nickel-copper mine to the Noranda smelter until the middle of September, after which the concentrates were shipped to the Flin Flon smelter under a new treatment contract.

British Columbia's 1960 copper production was 96 p.c. above that of 1959, amounting to 15,950 tons valued at $9,614,454. The increase was the result of a full year's production from the Greenwood mines of Phoenix Copper Company Limited and Consolidated Woodgreen Mines Limited, which operated at 1,000 tons and 650 tons a day, respectively. The Britannia mine of Howe Sound Company at Britannia Beach operated at about 1,200 tons a day. On Vancouver Island, Cowichan Copper Company Limited at Lake Cowichan operated a 500-ton-a-day mill treating ore from the Blue Grouse and Sunnyside orebodies. Concentrates from Cowichan Copper are shipped to Japan. The other copper producers in British Columbia ship their concentrates to the Tacoma, Wash., smelter of American Smelting and Refining Company. Exploration and development of properties continued during 1960. In the Highland Valley area, Craigmont Mines Limited started construction of a 4,000-ton-a-day mill and Japanese interests examined the feasibility of putting the property of Bethlehem Copper Corporation Limited into production. The Consolidated Mining and Smelting Company of Canada Limited announced plans to start development of the old Coast Copper property near Alice Lake on northern Vancouver Island.

The 625 tons of copper produced in the Northwest Territories came from the Rankin Inlet nickel-copper mine of North Rankin Nickel Mines Limited on the west coast of Hudson Bay.

Uranium.—Production of uranium oxide (U_3O_8) in 1960 amounted to a total of 12,518 tons valued at $262,935,404 compared with 15,892 tons valued at $331,143,043 in 1959. Decreased production was the result of the closing of ten mines after the United States Atomic Energy Commission, the principal outlet for Canadian uranium, announced it would not continue to purchase uranium from Canada in excess of commitments that were to expire in 1962 and 1963. At the time of the announcement, arrangements were also made to allow Canadian producers to 'stretch-out' to the end of 1966 the undelivered portion of uranium under the original sales contracts. The transfer of contracts from one company to another was also permitted. The stretch-out plan was designed to prevent the closing of all mines from Mar. 31, 1962 to Mar. 31, 1963. By the end of 1960, the industry was sufficiently re-oriented to permit the larger, low-cost producers to continue production beyond 1963, with a few expected to operate into 1966.

At the end of 1960, there were only ten mines in operation compared with 20 a year earlier. Some mines could not have fulfilled their contracts in any event owing to insufficient ore reserves or high operating costs, or both; some also had large capital overruns which made it difficult to repay their debt obligations. For these mines especially, the provisions of the stretch-out plan were of great assistance. Plans for future production call for a reduction year by year over the next six years so that in 1966 contract deliveries will be reduced to 1,100 tons. Mine employees declined from 11,792 at the beginning of 1960 to about 6,000 at the end of the year; 4,000 of these were employed in the Elliot Lake district of Ontario and 1,000 each in the uranium mining areas of Bancroft, Ont., and Beaverlodge Lake, Sask.

Although Canadian uranium producers are allowed to sell any amount of surplus uranium to countries that hold bilateral agreements with Canada for co-operation in the peaceful uses of atomic energy, there have been very few sales of this nature. Apart from the special contract agreements for the sale of uranium to the United States and the United Kingdom, Canada holds bilateral agreements with Switzerland, Japan, Pakistan, Australia, and Euratom (which comprises six European nations). For other countries, a Canadian producer may, subject to government approval, sell up to 2,500 lb. of uranium but when this limit is reached for a given country further shipments from Canada are not permitted.

Ontario's output of 9,883 tons of uranium oxide (U_3O_8) in 1960 was 79 p.c. of the Canadian total. In the Elliot Lake camp, which is the largest uranium mining camp in the world, ten mines were in operation at the beginning of 1960 but by the end of the year five had closed as a result of consolidations that had taken place. The mines that closed were the Pronto, Quirke and Lacnor mines of Rio Algom Mines Limited, Can-Met Explorations Limited, and Stanleigh Uranium Mining Corporation Limited. The mines that remained in production were Denison Mines Limited, Stanrock Uranium Mines Limited, and three mines operated by Rio Algom Mines Limited—Milliken, Nordic and Panel. Ore reserves in the Elliot Lake camp are estimated at 298,000,000 tons grading 0.12 p.c. U_3O_8.

In the Bancroft area there were only two mines in operation at the end of 1960—Bicroft Uranium Mines Limited and Faraday Uranium Mines Limited. Each mine operated throughout the year at an average rate of about 1,200 tons of ore a day. A third producer, Canadian Dyno Mines Limited, made arrangements with Gunnar Mines Limited early in the year, allowing Gunnar to fulfil the remainder of Dyno's contract. The Dyno mine was closed in June. Ore reserves in the Bancroft camp are estimated at 4,000,000 tons grading 0.1 p.c. U_3O_8.

The Beaverlodge Lake area in northwestern Saskatchewan produced 2,307 tons of uranium concentrates (U_3O_8) during 1960, a slight decrease from the previous year. The principal producers were Eldorado Mining and Refining Limited and Gunnar Mines Limited, both of which continued production throughout the year. In March, Lorado Uranium Mines Limited sold its contract to Eldorado and the Lorado mine and custom mill were closed. This move necessitated the closing of Lorado's custom shippers—Lake Cinch Mines Limited, Cayzor Athabaska Mines Limited, Rix-Athabasca Mines Limited—and several other smaller shippers. Total ore reserves in the Beaverlodge camp are estimated at 6,000,000 tons grading 0.20 p.c. U_3O_8.

Uranium production in the Northwest Territories ceased in September when the reserves at Eldorado's Port Radium deposit were mined out. Production was 327 tons of U_3O_8 in 1960.

The measured, indicated and inferred uranium reserves in Canada as of Jan. 1, 1960, were estimated at 308,500,000 tons grading 0.12 p.c. U_3O_8. This is equivalent to 370,200 tons of uranium oxide (U_3O_8), the largest reserve of uranium in the world.

Iron Ore.—Shipments of iron ore by Canadian producers in 1960 decreased sharply from the all-time high set in 1959 to 21,507,783 tons, a drop of 12 p.c.; the value declined from $192,666,101 to $171,670,605. Shipments from producers in British Columbia and Newfoundland were higher and the unit value of ore shipped from all producing provinces except Newfoundland was also higher.

Imports from the United States Lake Superior district for use in Ontario blast furnaces increased. Rather than reflecting a growing trend, the 1960 level of imports represented a return to more normal conditions after the general recession of 1958 and the strike in the United States steel industry and iron mines in 1959. A larger portion of the output from Canadian iron ore mines had been consumed domestically in 1959 to offset the effects of the strike and to enable Ontario blast furnaces to operate at a high rate.

Canada's principal iron ore market is the United States, followed in order by the United Kingdom, Western Europe and Japan. Early in the year, most United States steel and iron ore executives predicted a near-record steel production of 120,000,000 tons for 1960. Correspondingly, Canadian iron ore exports to the United States were at a high level during the first six months but United States steel production commenced an unexpected decline in April that levelled out in July to from 50 to 55 p.c. of capacity, where it remained the balance of the year. Stocks of iron ore at blast furnace sites increased steadily and resulted in a sharp cutback in ore receipts during the last four months. As a consequence, Canadian iron ore production and exports to the United States declined. In contrast, steel production and iron ore consumption in the United Kingdom, Western Europe and Japan remained at a high level throughout most of 1960 and Canada's iron ore exports to these areas increased.

Canada's relative iron ore market position declined in varying degrees with respect to ore imported by the major iron ore consuming nations, particularly the United States. Continuing and increasing competition is being experienced from a number of countries of South America and Africa. Because of this competition, product research on direct-shipping ores and the development of properties for the production of high-grade concentrates and agglomerates are becoming increasingly important features of the Canadian iron ore industry.

Iron Ore Company of Canada, with direct shipping ore deposits astride the Labrador-Quebec border, 360 miles north of the port of Sept Îles, Que., is the largest iron ore producer in Canada, accounting for about 51 p.c. of 1960 shipments. Wabana Mines Limited, wholly owned subsidiary of Dominion Steel and Coal Corporation, Limited, produces heavy media concentrate from its Bell Island, Nfld., operations and accounted for about 14 p.c. of the year's shipments. Nearly 4 p.c. of 1960 shipments was in the form of pelletized iron ore concentrate from the Hilton Mines near Shawville, Que.

In Ontario, Caland Ore Company Limited, Canadian Charleson Limited and Steep Rock Iron Mines Limited operate mines near Atikokan, 140 miles west of Port Arthur. Caland, a new producer in 1960, mined direct-shipping ore and accounted for approximately 4 p.c. of Canada's 1960 shipments. Canadian Charleson produces small amounts of concentrate from hematite-bearing gravels. Steep Rock, the oldest producer in the area, produced direct-shipping ore and concentrates to account for over 8 p.c. of the nation's shipments. In the Michipicoten area, Algoma Ore Properties Division of Algoma Steel Corporation, Limited operates mines and a sinter plant at Wawa and accounted for 9 p.c. of the 1960 shipments. Marmoraton Mining Company Limited produces pelletized iron ore concentrates at its plant near Marmora, and Lowphos Ore Limited produces iron ore concentrate at its plant near Capreol. Together these companies accounted for nearly 5 p.c. of the country's shipments.

Shipments by the three British Columbia producers exceeded 1,000,000 tons, an all-time high, and accounted for over 5 p.c. of total Canadian shipments in 1960. Empire Development Company Limited and Nimpkish Iron Mines Limited operate mines in the northern part of Vancouver Island and Texada Mines Limited produces from mines on Texada Island.

Three companies produce iron by-products from processing materials other than iron ores. Two of these—The International Nickel Company of Canada, Limited at Copper Cliff, Ont., and Noranda Mines Limited at Cutler, Ont.—treat iron sulphides and produce high-grade iron oxide agglomerates. In 1960, International Nickel announced plans to triple its iron output capacity to 900,000 tons by 1963. Quebec Iron and Titanium Corporation treats ilmenite at its Sorel, Que., electric smelter to produce titania slag and pig iron. The ilmenite is mined from deposits near Allard Lake.

Despite the increasing competition for the world's iron ore markets, the rapid increase in Canadian iron ore production during the past decade is expected to continue. Properties being developed for production will result in an increase of Canada's iron ore production capacity to over 40,000,000 tons by 1965. The development of three properties in Labrador-Quebec for production in the next five years is of particular importance, although there is considerable exploration and development work continuing on several iron ore properties throughout Canada. In the Wabush Lake area of Labrador, 190 miles north of Sept Îles, Iron Ore Company of Canada and Wabush Iron Company Limited are developing large iron deposits for production. The former company will spend over $150,000,000 on a mine and concentrator with a production capacity of 7,000,000 tons of concentrate a year by 1962, and the latter company will probably spend over $100,000,000 on similar facilities with production capacity of 4,000,000 to 5,000,000 tons of concentrate a year by 1965. Quebec Cartier Mining Company has spent nearly $200,000,000 on its Lac Jeannine project near the town of Gagnon, about 145 miles north of Shelter Bay on the St. Lawrence River. Construction of a deep-water harbour at Port Cartier near Shelter Bay, a 193-mile railway, a 60,000-hp. hydro-electric development and a beneficiation plant with capacity to produce 8,000,000 tons of concentrate a year were all started late in 1958. Initial production is scheduled for early 1961. In British Columbia, three new producers plan to start shipments in 1961 and 1962 at a combined rate of approximately 1,300,000 tons a year. In January 1961, the Consolidated Mining and Smelting Company of Canada Limited commenced production of electric furnace pig iron at Kimberley. Raw material for this 36,500-ton-a-year facility is iron oxide calcine, previously a waste product from the company's sulphuric acid plant.

Gold.—Conditions in Canada's gold mining industry in 1960 were more favourable than in 1959. The average Mint price for gold increased to $33.93 an oz.t. (based on Dominion Bureau of Statistics preliminary estimates) from $33.57 in 1959. Production rose to 4,602,762 oz.t. from 4,483,416 oz.t. and the value increased to $156,171,715 from $150,508,275. There was a sharp rise in the gold price on international markets late in 1960 which resulted in increased earnings for gold mines selling on the open market. The higher Mint price resulted from the Canadian dollar moving closer to parity with the United States dollar in the latter part of the year.

The 25-p.c. increase in cost assistance granted to lower-grade gold mines by an amendment to the Emergency Gold Mining Assistance Act in 1959, together with an extension of these benefits to the end of 1963, provided stability to higher-cost mines and aided in offsetting increased operating costs. New union agreements at most mines increased labour costs. Material and power costs were also higher in many mining areas. A total of 54 lode gold mines operated during 1960, of which 42 received cost assistance under the terms of the Emergency Gold Mining Assistance Act. The others were not eligible because their operating costs were less than $26.50 an oz.t. of gold produced. Many of these low-cost mines sold all or part of their gold production on the open market. Three lode gold mines closed during the year and two new mines started operations.

In 1960, 85.5 p.c. of Canada's gold production came from lode gold mines, 13.0 p.c. was by-product output from base-metal mines and 1.5 p.c. came from placer gold deposits. Gold occupied sixth place in value among minerals produced in Canada, following crude petroleum, nickel, copper, uranium oxide and iron ore. Canada remained the second largest gold-producing country in the Free World, following the Union of South Africa. The outlook for gold mining in Canada was brighter than it had been for many years. Gold was selling at approximately $35.60 oz.t. in the London international gold market at the end of 1960 and the Canadian dollar was close to parity with the United States dollar; a high of $34.82 oz.t. was reached in the last week of 1960.

Ontario was the main producer, accounting for 59.0 p.c. of the 1960 total output. An estimated 2,725,077 oz.t. were produced compared with 2,683,449 oz.t. in 1959, only the Porcupine and Kirkland Lake districts showing declines in output. Thirty-one lode gold mines operated in the province during 1960, 13 of them in the Porcupine district where the chief producers were Hollinger Consolidated Gold Mines, Limited (Canada's second-largest gold producer), McIntyre Porcupine Mines Limited, Dome Mines Limited and Aunor Gold Mines Limited. In the Larder Lake district only one lode gold mine operated but this was Canada's largest gold producer, Kerr-Addison Gold Mines Limited, whose production reached an all-time high of nearly 700,000 oz.t. In the Patricia district, seven mines were operated, with a new mine, H. G. Young Mines Limited, starting production in August. The principal producers in the district were Campbell Red Lake Mines Limited, Madsen Red Lake Gold Mines Limited and Dickenson Mines Limited. In the Kirkland Lake district, seven mines recorded production but Kirkland Minerals Corporation Limited closed its mine in September. The main producers were Macassa Mines Limited, Wright-Hargreaves Mines, Limited and Lake Shore Mines Limited. In the Port Arthur mining division, MacLeod-Cockshutt Gold Mines, Limited and Leitch Gold Mines Limited continued to operate. Renabie Mines Limited continued to operate in the Sudbury mining division. Some 50,000 oz.t. of gold were recovered as a by-product from base-metal mines in the province, most of it coming from the copper-nickel mines of the Sudbury district.

Quebec produced 22.5 p.c. of Canada's gold production, with 13 lode gold mines operating during 1960; production totalled 1,033,249 oz.t. compared with 999,388 oz.t. in 1959. Nearly 40 p.c. of the gold was recovered as a by-product in smelting base-metal ores from the Horne mine of Noranda Mines Limited and other Quebec mines that ship concentrates to the Noranda smelter. Anacon Lead Mines Limited (Chibougamau operation), classed as a lode gold mine, was closed in August and a new mine, Akasaba Gold Mines Limited, started shipments to the Bevcon Mines Limited mill on Mar. 1. The largest lode gold producers were Lamaque Mining Company Limited and Sigma Mines (Quebec) Limited at Bourlamaque, and East Malartic Mines Limited and Malartic Gold Fields Limited in the Malartic area.

The Northwest Territories produced 9 p.c. of the gold recovered in Canada. All production came from lode gold mines in the Yellowknife area and totalled 411,492 oz.t. compared with 405,922 oz.t. in 1959. Four mines operated, with Giant Yellowknife Mines Limited and Consolidated Discovery Yellowknife Mines Limited being the main producers. Giant is now Canada's third largest gold producer. Taurcanis Mines Limited continued development of a gold prospect some 100 air miles northeast of Yellowknife.

British Columbia produced approximately 4.5 p.c. of Canada's gold output, nearly 90 p.c. of it from lode gold mines and the remainder from base-metal and placer operations. Four lode gold mines operated; Bralorne Pioneer Mines Limited, the only large producer, operated two mines in the Bridge River area—the Pioneer division mine which was closed in October 1960 and the Bralorne division mine which increased its gold output. The

Cariboo Gold Quartz Mining Company Limited operated in the Wells area and French Mines Limited in the Hedley area. Placer gold production was lower but some small operations worked in the Wells and Atlin areas.

In the Prairie Provinces, Manitoba recovered 51,352 oz.t. compared with 51,186 oz t. in 1959. Approximately 57 p.c. of the production came from San Antonio Gold Mines Limited and Forty-Four Mines Limited and the remainder as a by-product from smelting base-metal ores of the Flin Flon area and Lynn Lake. Saskatchewan recovered 87,288 oz.t. compared with 78,588 oz.t. in 1959, with all gold production coming from base-metal mines near Flin Flon on the Manitoba–Saskatchewan border. A small amount of placer gold was recovered from the North Saskatchewan River near Edmonton, Alta. In the Yukon Territory, all gold production came from placer operations. The total recovered was 77,770 oz.t. compared with 66,960 oz.t. in 1959. The number of placer operations increased but about 70 p.c. of the gold recovered came from the dredging operations of The Yukon Consolidated Gold Corporation Limited in the Dawson area.

In the Maritime Provinces, the only gold production reported was a few ounces recovered from an old lode gold mine in Nova Scotia. In Newfoundland, 13,479 oz.t. were recovered as a by-product from the base-metal operations of Buchans Mining Company Limited at Buchans and Maritimes Mining Corporation Limited at Tilt Cove. This output compared with 13,411 oz.t. in 1959.

Lead and Zinc.—Production of lead in Canada during 1960 is estimated at 189,267 tons having a value of $40,427,281, compared with 186,696 tons in 1959 valued at $39,616,835. Production increases totalling 5,838 tons were recorded in British Columbia, Manitoba and Newfoundland, and decreases totalling 3,267 tons were recorded in Ontario, Quebec and the Yukon. The price of lead in 1960 was 10.75 cents a pound until Apr. 12 when it increased to 11 cents. Subsequently, it dropped in two stages to a year-end price of 10 cents a pound. The average for the year was 10.73 cents compared with 10.57 cents for 1959.

Exports of lead concentrates were somewhat lower in 1960 than in 1959. Concentrates totalling 51,335 tons were shipped to the United States (26,895 tons), West Germany (12,220 tons), Belgium (11,445 tons) and Japan (775 tons). The total for 1959 was 53,726 tons. On the other hand, refined lead exports amounted to 96,449 tons in 1960 as against 92,252 tons in 1959. They were distributed to the United Kingdom (54,032 tons), the United States (28,866 tons), Japan (10,379 tons) and other countries (3,172 tons).

During 1960, zinc prices changed six times. The price per pound of Prime Western grade zinc remained in the 12.50-to-13.00-cent-range to Dec. 20 when, following price declines in the United Kingdom and the United States, it dropped to 12.00 cents. Average prices per pound of Prime Western zinc in 1959 and 1960 were 11.65 cents and 12.75 cents, respectively. Mine output of zinc in 1960, estimated at 405,620 tons, was 2.4 p.c. higher than the 396,008 tons produced in 1959. The respective values in those years were $108,209,749 and $96,942,663.

Exports of zinc in 1960 amounted to 376,984 tons, 4.5 p.c. higher than in 1959. The principal importers of Canadian refined zinc were the United Kingdom (92,435 tons) and the United States (75,237 tons), India and Japan with other countries importing 39,419 tons. Most of the 1960 exports of zinc in concentrates—an amount of 137,375 tons—went to the United States, while Norway, the United Kingdom and Belgium together imported 21,152 tons in approximately equal amounts. Altogether, 21 countries imported zinc from Canada.

Preliminary figures show that domestic consumption of both lead and zinc decreased in 1960. Consumption of lead in 1960 was 44,450 tons compared with 49,414 tons in 1959; zinc consumption at 53,450 tons in 1960 was considerably lower than the 65,999 tons consumed in 1959. Close to 80 p.c. of Canada's lead production and 50 p.c. of the zinc production in 1959 and 1960 were produced in British Columbia; most of this production was obtained from the Sullivan mine at Kimberley, the Bluebell mine at Riondel and the H.B.

mine at Salmo, all of which are operated by The Consolidated Mining and Smelting Company of Canada Limited (COMINCO). Combined ore output of the three mines per working day was about 12,000 tons, of which approximately 9,600 came from the Sullivan mine. Concentrates from mines in British Columbia, Yukon Territory and some foreign areas were treated at the COMINCO smelter at Trail. Other important British Columbia producers of lead and/or zinc in 1959 and 1960 included Canadian Exploration Limited and Reeves MacDonald Mines Limited, both near Salmo; Sheep Creek Mines Limited, west of Invermere; and Howe Sound Company, Britannia Division, north of Vancouver. In the Yukon, the only important producer of lead and zinc was United Keno Hill Mines Limited whose production was from the Calumet, Hector and Elsa mines in the Mayo district.

In Manitoba and Saskatchewan, Hudson Bay Mining and Smelting Company Limited was the only producer of lead and zinc. Three of its mines—the large Flin Flon mine, the Schist Lake mine, and Coronation mine—are at or near Flin Flon. A fourth, the new Chisel Lake mine at Snow Lake, 70 miles east of Flin Flon, commenced production of zinc, lead and copper ore at 1,000 tons a day in the latter part of 1960. The Chisel Lake mine was the only producer of lead in the two provinces. All the ore from these four mines was concentrated in the company's 6,000-ton-a-day mill at Flin Flon. Zinc is recovered in the company's electrolytic refinery, which has an annual capacity of 73,000 tons of refined zinc.

In Ontario, zinc concentrate and a small amount of lead concentrate were produced by Geco Mines Limited and Willroy Mines Limited in the Manitouwadge district north of Lake Superior. Quebec's main source of zinc was copper-zinc ore from mines in the Noranda-Val d'Or area operated by Quemont Mining Corporation Limited, Manitou-Barvue Mines Limited, Normetal Mining Corporation Limited, Sullico Mines Limited and Waite Amulet Mines Limited. New Calumet Mines Limited, whose mine is 70 miles west of Ottawa, was Quebec's main lead producer. Manitou-Barvue also produced lead concentrates. The only lead-zinc producer in the Atlantic Provinces was at Buchans, Nfld., operated by American Smelting and Refining Company.

Exploration and development activities were for the most part confined to the Snow Lake area of Manitoba, the Noranda and Watson Lake (100 miles north of Senneterre) areas of Quebec and the Bathurst area of New Brunswick. At Snow Lake, Hudson Bay Mining and Smelting continued to develop its Stall Lake mine, a potential producer of copper-zinc ore. In the Noranda area, Consolidated Vauze Limited did extensive underground exploration and development on its copper-zinc property adjacent to Waite-Amulet Mines Limited. In mid-1960, Mattagami Mines Limited commenced shaft-sinking on its property in the Watson Lake area where it has outlined 23,000,000 tons of zinc-copper ore. Some exploration was done on lead-zinc properties in the Bathurst area by Brunswick Mining and Smelting Corporation Limited, Heath Steele Mines Limited, Kennco Explorations (Canada) Limited and the New Jersey Zinc Company.

Silver.—Canada's silver production in 1960 was 32,328,143 oz.t. valued at $28,726,788 compared with 31,923,969 oz.t. valued at $28,022,860 in 1959. A major increase in production of over 1,000,000 oz.t. was recorded in British Columbia and smaller increases were recorded in Manitoba, Quebec and the Northwest Territories; production from Ontario, Newfoundland, Saskatchewan and the Yukon Territory declined.

World production during 1959 declined an estimated 13,500,000 oz.t. from the 1959 production of 238,500,000 oz.t. Canada, with a 2-p.c. gain, was the only major silver producer to register increased output. The United States reported a decline of 9 p.c. in mine production of recoverable silver. As a result, Canada moved up to second place in world output, ahead of the United States and exceeded only by Mexico. Silver consumption in Canada in 1959 was 10,252,760 oz.t. compared with 9,299,809 oz.t. in 1958. Coinage requirements, at 5,737,347 oz.t. compared with 4,662,224 oz.t., more than accounted for the entire increase. Free World consumption of silver in 1959 was estimated at 297,000,000 oz.t., a gain of 18 p.c. over 1958.

Base-metal ores treated at domestic and foreign smelters are Canada's chief source of silver. Most of the silver from these ores is recovered by The Consolidated Mining and Smelting Company of Canada Limited in smelting lead-zinc ores at Trail, B.C. That company produced 9,367,029 oz.t. of refined silver in 1959, about 29 p.c. of total Canadian production. Important amounts were recovered from blister copper by Canadian Copper Refiners Limited at Montreal East, Que.; from silver-cobalt ores at the refinery of Deloro Smelting and Refining Company Limited, Deloro, Ont.; from nickel-copper ores treated at Copper Cliff, Ont., by The International Nickel Company of Canada, Limited; and from gold bullion refined at Timmins and Ottawa, Ont., by Hollinger Consolidated Gold Mines Limited and the Royal Canadian Mint, respectively. United Keno Hill Mines Limited, Canada's largest mine producer of silver, produced 7,248,800 oz.t. during the year ended Sept. 30, 1960, compared with 7,307,815 oz.t. in the previous fiscal year. Other leading primary producers were Highland-Bell Limited in British Columbia, Agnico Mines Limited and Langis Silver and Cobalt Mining Company Limited near Cobalt, Ont., McIntyre Porcupine Mines Limited and Siscoe Metals of Ontario Limited near Gowganda, Ont. These five companies together produced 6,668,396 oz.t. in 1959.

The average Canadian price of silver in 1960 was 88.86 cents an oz.t. compared with 87.78 cents in 1959.

Platinum Metals.—The platinum metals include the two triads of platinum-iridium-osmium and palladium-rhodium-ruthenium. All occur in the nickel-copper ores of the Sudbury district of Ontario, although osmium is not recovered. The amount present in the Sudbury ores averages about 0.02 oz.t. of platinum metals per ton of ore but this becomes appreciable when the large tonnages of ore treated are considered. Production in 1960 was 221,832 oz.t. of platinum valued at $18,134,766 and 238,489 oz.t. of palladium, rhodium, ruthenium and iridium valued at $9,538,921. The 1960 production was 40 p.c. greater than that of 1959 and was the second highest on record. Canadian producers of the platinum metals are Falconbridge Nickel Mines Limited and The International Nickel Company of Canada, Limited.

The Union of South Africa and the Union of Soviet Socialist Republics are other major producers but neither country has published production figures in recent years. Platinum metals production in South Africa comes from sulphide ore in the Merensky Reef horizon of the Bushveld Complex. Annual production capacity is rated at 625,000 oz.t. although this has not as yet been attained. Russian production comes from the old native platinum placers in the Ural mountains and as by-products from nickel-copper mines at Norilsk, Petsamo and Monchegorsk.

Major uses of the platinum metals are as catalysts in the chemical industry and as electrical contacts in the electrical industry. Minor uses are in jewellery and dental-medical equipment.

Cobalt.—Cobalt occurs in the copper-nickel ores of The International Nickel Company of Canada, Limited and Falconbridge Nickel Mines Limited in the Sudbury area of Ontario. International Nickel recovers cobalt from its nickel-refining operations at Port Colborne, Ont., and Clydach, Wales. Falconbridge recovers it in the refining of nickel-copper matte at its refinery at Kristiansand, Norway. Cobalt contained in the silver ores from the Cobalt and Gowganda areas of Ontario is recovered by Deloro Smelting and Refining Company Limited at its smelter at Deloro, Ont.; because of lack of feed, this smelter is expected to close early in 1961. Sherritt Gordon Mines Limited produces refined cobalt and nickel powders and briquettes in its refinery at Fort Saskatchewan, Alta., from nickel-copper concentrates shipped from its mine at Lynn Lake in northern Manitoba. No cobalt ore has been produced in Canada since 1957. In 1960, Canadian cobalt production amounted to 3,330,914 lb. valued at $5,669,560 compared with 3,150,027 lb. valued at $5,954,916 in 1959.

Columbium.—In 1960 St. Lawrence Columbium and Metals Corporation started construction of a mill at Oka, Que., 32 miles west of Montreal, for the production of columbium concentrate assaying from 50 to 55 p.c. Cb_2O_5. This will be the first commercial production of columbium concentrates in Canada. Two other companies—Quebec Columbium Mines Limited and Columbium Mining Products, Limited—have carried out extensive research and exploration programs in the same area. The main world source of columbium has been Nigeria, which produces about 60 p.c. of the world supply.

Molybdenum.—Molybdenite Corporation of Canada Limited continued to be the sole Canadian producer of molybdenite and molybdic oxide in 1960. Shipments during the year from the company's mine at Lacorne, Que., amounted to 758,507 lb. of contained molybdenum valued at $1,000,265, compared with 748,566 lb. valued at $940,596 in 1959. Preissac Molybdenite Mines Limited, in which Molybdenite Corporation holds a substantial interest, erected a headframe for a new three-compartment shaft, started sinking operations and brought hydro-electric power to its property during the year.

Titanium.—Ilmenite, an iron-titanium oxide, is mined in the Allard Lake and St. Urbain areas of Quebec. Ilmenite from St. Urbain is sold as heavy aggregate. Most of the Allard Lake ore is smelted at Sorel, Que., in electric furnaces by Quebec Iron and Titanium Corporation, to produce a high titania slag, most of which is exported to pigment producers in the United States, Japan and the United Kingdom. Some goes to a Canadian pigment manufacturer. In 1960, the value of titanium shipped as ore, heavy aggregate or titanium-bearing slag was $14,269,292. This was $5,632,578 above the 1959 value and represented an all-time high for Canadian production.

Selenium and Tellurium.—These metals are derived from the refining of blister copper by Canadian Copper Refiners Limited at Montreal East, Que., where the company operates one of the largest selenium and tellurium metal-and-salts plant in the world. International Nickel also produces selenium and tellurium at Copper Cliff, Ont. Selenium production in 1960 totalled 562,272 lb. valued at $3,487,804 compared with 368,107 lb. in 1959 valued at $2,576,749. Tellurium production in 1960 rose to 56,352 lb. valued at $197,232 from the 13,023 lb. worth $27,999 produced in 1959.

Magnesium.—Dominion Magnesium Limited was the only producer of magnesium in 1960. Its thermal reduction plant and adjacent dolomite quarry are located at Haley, Ont. Production of magnesium in 1960 amounted to 14,746,427 lb. valued at $4,280,232 compared with 12,204,448 lb. valued at $3,179,515 in 1959.

Other Metals.—Canada also produces antimony, bismuth, cadmium, calcium, thorium and tin, mainly as by-products in the refining of base metals. Of these metals, the most important were cadmium, with a 1960 production of 2,244,783 lb. valued at $3,187,591, bismuth with 464,440 lb. valued at $832,342, tin valued at $541,065, and antimony at $496,400.

CANADIAN METALLURGICAL DEVELOPMENT*

In 1940, Canada's mineral industry produced metallics, non-metallics, mineral fuels and structural materials valued at $530,000,000; in 1960 the value of mineral output reached almost $2,410,000,000. The growth during this period reflects expansion resulting from the needs of World War II and subsequent postwar industrialization in this country.

Although a portion of the increase in value resulted from higher prices for mine products, there has been a steady and significant increase in physical volume in all but a few minerals. The steady rise in mineral production has been accompanied by increased cost of operation so that the industry has been faced with many complex problems including the depletion of the richer ore reserves. The successful application of many new and improved metallurgical processes has made possible the economic development of less accessible, medium-grade and finally low-grade mineral deposits.

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* A review of the past twenty years, prepared under the direction of Dr. John Convey, Director of the Mines Branch, Department of Mines and Technical Surveys, Ottawa.

The mineral and metal needs of World War II gave stimulus to the development of research facilities by federal and provincial governments, universities and the mining industry. This capacity, applied initially to the war effort, has become an essential part of present-day operation in Canada's growing role as a producer and supplier of world markets in competition with expanding mineral production in a number of other countries.

Uranium

Uranium mining in Canada originated indirectly from the radium industry which developed on the eastern shore of Great Bear Lake at Port Radium in the Northwest Territories. In 1933, Eldorado Gold Mines commenced production of radium and silver from a rich pitchblende deposit in this area, using a process developed in the Mines Branch laboratories. The operation continued until 1941 when the mine was closed. In 1942, with nuclear uses of uranium becoming important to the war effort, the mine was taken over by a Crown company, Eldorado Mining and Refining Limited, and by 1944 the company was producing a uranium concentrate using gravity methods.

Early in the atomic energy program it was apparent that the necessary increase in uranium production would require more efficient extraction processes. In 1945, the Mines Branch of the now federal Department of Mines and Technical Surveys began securing new staff for its Radioactivity Section which had responsibility for the development of processes for the treatment of uranium-bearing ores. By 1949 this group had developed a satisfactory sulphuric acid leaching process for the Port Radium gravity concentrate tailings. The next work undertaken by the Radioactivity personnel was test work on the Beaverlodge ores from Eldorado Mining and Refining Limited which have a higher carbonate content than those at Port Radium. The problem was solved by use of sodium carbonate-sodium bicarbonate solution leaching methods. In 1953 the first samples from the Gunnar Mine in Saskatchewan were received for testing. The same year, samples from the vast deposits in the Elliot Lake area were submitted. Successful processes were developed by use of an acid leach followed by the introduction of ion exchange for the purification of solution prior to precipitation. This resulted in production of high-grade concentrates which were required to meet contract specifications.

The peak of uranium production was reached in 1959 when 31,784,189 lb. of uranium oxide valued at $331,143,043 were produced, and uranium led all other metals in value of production.

Eldorado Mining and Refining Limited refines uranium at Port Hope, Ont. The company produces uranium metal and uranium compounds of consistent quality and the highest purity. Through its facilities and those of associated companies, the metal can be supplied in the form of machined ingots and forged, rolled and cast shapes, and completely fabricated fuel elements. Uranium-dioxide fuel elements of ceramic grade can also be supplied. However, only a small percentage of the uranium concentrate from Canadian mines is refined at Port Hope. Most of it is shipped from the mines direct to the United States and the United Kingdom. Canadian contracts with the United States Atomic Energy Commission will terminate in 1966 and it is estimated that annual uranium production will have declined to 2,200,000 lb. by that time.

Of increasing interest is the research on non-nuclear uses of uranium being conducted by the Mines Branch in co-operation with Eldorado Mining and Refining Limited. This project was undertaken in 1959 to help close the gap between Canada's uranium production capacity and the reduced demand that will occur on the termination of United States contracts. The results of this research have shown considerable promise in the use of uranium as an alloying agent to improve fatigue strength, stress corrosion resistance and elevated temperature strength of certain commercial steels.

Prior to World War II, uranium and uranium compounds were used in the arts and industry as colouring materials for ceramics, as chemical reagents, and in a variety of alloys. At that time, however, the metal and its salts were costly and the supply was limited. In addition, the preparation of pure metal was difficult and relatively little was known of the physical and chemical properties of the metal or its compounds. Extensive studies made as part of the nuclear program greatly increased the knowledge of this metal and resulted in the development of more efficient and less costly production methods.

To exploit the potential of uranium in commercial applications unrelated to the nuclear program, the uranium-producing companies in Canada joined together late in 1960 to form the Canadian Uranium Research Foundation,* the stated objective of which is "to provide for research in the use of the products of the uranium industry, to disseminate information relative to such products and to promote, foster, and stimulate the uranium industry".

From their own resources the uranium producers have agreed to provide a minimum of $250,000 per year for five years to support the Foundation, contributions being based on the value of output by individual companies. Although the principal effort of the Foundation is directed toward immediate applications, nevertheless it is considered desirable that a small proportion of the funds be expended on longer term projects of a more basic nature. The investigation of additions of uranium to steel now comes under the Foundation, with the work continuing in the Mines Branch laboratories.

Important developments on two nuclear-power stations are under way—a 20,000-kw. experimental station, known as NPD-2 (Nuclear Power Demonstration) being built near Rolphton, Ont., and a full-scale 200,000-kw. station, known as CANDU (Canadian Deuterium Uranium) under development on the shores of Lake Huron, nine miles north of Kincardine, Ont. These developments are described at pp. 378–383.

Sulphur

The accelerated industrial expansion in Canada during the past two decades has been accompanied by a steadily growing need for sulphur. Sulphur is usually consumed as sulphuric acid but in Canada large amounts of elemental sulphur are required by the pulp and paper industry. Other consumers are the fertilizer, chemical, uranium and steel industries.

Although there are no known deposits of sulphur in this country, sulphur or its equivalent in other forms has been produced from native pyrite and pyrrhotite for many years. In 1959, by-product pyrite and pyrrhotite from base-metal mines amounted to 1,051,873 tons with a sulphur content of 418,220 tons, much of which was utilized as sulphuric acid.

However, a new and highly important source of this commodity was created by the natural gas industry of Western Canada which has experienced its greatest expansion since 1948. Natural gas is termed 'sour' when it contains appreciable amounts of hydrogen sulphide and carbon dioxide which must be removed prior to marketing. By the end of 1960, seven natural gas recovery plants in Alberta, one in British Columbia and one in Saskatchewan were in operation and several others were in various stages of construction. In the processing plant, hydrogen sulphide and carbon dioxide are removed from the natural gas by passing the gas stream through solutions of monoethanolamine and dimethanolamine. The acid fractions are completely soluble in these absorbents. When the absorbent solution is nearly saturated with acid gases, it is regenerated by heating. The concentrated hydrogen sulphide and carbon dioxide are thus driven off and the absorbent is recirculated to pick up more gases. The enriched hydrogen sulphide collected in this way is further processed to produce elemental sulphur.

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* Member companies: Gunnar Mines Limited; Bicroft Mines Limited; Eldorado Mining and Refining Limited; Denison Mines Limited; Rio Algom Mines Limited; and Faraday Uranium Mines Limited.

It is estimated that during 1961 annual capacity of elemental sulphur will reach 1,500,000 tons. Until 1952, Canada's requirements for the elemental form were supplied by imports; today, large-scale exports are needed to market current production recovered as a by-product of natural gas processing.

Nickel-Copper-Iron Sulphide Ores

For more than 50 years, the nickel-copper-iron sulphide ores of the Sudbury district of Ontario have been the world's principal nickel source. Separation of copper from the nickel has been one of the major metallurgical problems in treatment of these ores. In the past, the bulk of the copper was removed by the Orford process. Now, much improved separation has been achieved by The International Nickel Company of Canada, Limited in the successful development of a process based on flotation and magnetic separation of slowly cooled bessemer matte to yield nickel sulphide, copper sulphide, and a metallic fraction containing the precious metals. This process, marking the first commercial application of mineral dressing principles to matte products, was established on a commercial scale at Copper Cliff in 1944, and by late 1948 all International Nickel matte was so treated.

Since the nickel sulphide was low in both copper and precious metals, it became possible to sinter part of it for direct production of nickel oxide sinter, without the previously required refining operations. Beginning in 1956, another portion of the nickel sulphide has been used in production of matte anodes for direct electrorefining of nickel and recovery of high-purity sulphur, selenium and cobalt. This new process eliminates traditional operations of high-temperature converting of reverbatory furnace matte to blister copper which is cast into anodes for electrorefining. Instead, the molten matte is cast directly into sulphide anodes and electrolyzed. At International Nickel's new plant at Thompson, Man., the molten matte is produced in electric furnaces.

High-iron content of nickel concentrates produced at Copper Cliff has been a controlling factor in nickel smelting capacity. Solution to the problem has been found by separating an iron concentrate of low nickel and sulphur content, with virtual elimination of copper, precious metals, and silicates.

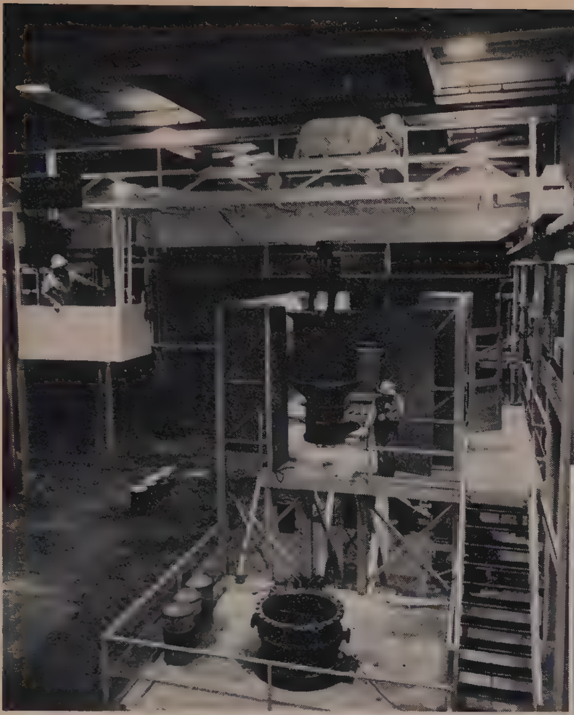
A $20,000,000 plant for separate treatment of 365,000 tons per year of pyrrhotite by the new process was constructed near Copper Cliff and its operation started early in 1956. It is the first unit of an installation which will have a capacity of more than 1,000,000 tons per year of pyrrhotite. Sulphur elimination is accomplished in fluid bed roasters, operating in closed circuit with cooling boilers and cyclones. Nickel is extracted by atmospheric pressure leaching in ammoniacal solutions, following selective reduction of the calcine to magnetite and nickel metal in a kiln using gases for reduction. The magnetite fines are agglomerated into one-inch balls by pelletizing on discs and firing on a travelling grate. This premium product has been used very successfully as open hearth charge ore by the steel industry in Canada and the United States.

The bringing into production of the Lynn Lake property in Manitoba by Sherritt Gordon Mines, Limited in 1953 added another important source of nickel to Canada's supply. The process used by Sherritt Gordon in the treatment of the Lynn Lake nickel-copper ore for the concentration, extraction and recovery of the metals is a radical departure from the usual practice of treating sulphide ores. After selective flotation of the ore to yield a copper-sulphide concentrate and a nickel-iron sulphide concentrate containing some copper and a small amount of cobalt, the process is basically chemical. The copper concentrates can be economically smelted and refined in the usual manner.

The nickel-copper-cobalt-iron sulphide concentrates are leached under pressure in stainless steel autoclaves with air and aqueous ammonia to dissolve the nickel, copper, cobalt and most of the sulphur, leaving the iron and other impurities in the tailings. The copper is first removed from the solution as a sulphide by boiling, the nickel is precipitated by hydrogen under pressure, the cobalt is removed by treatment with hydrogen sulphide, and the end solutions are evaporated to produce ammonium sulphate.

URANIUM

Production of uranium metal at the Port Hope refinery of Eldorado Mining and Refining Limited. Uranium metal reaction vessel being removed from the reduction furnace after firing.



NICKE

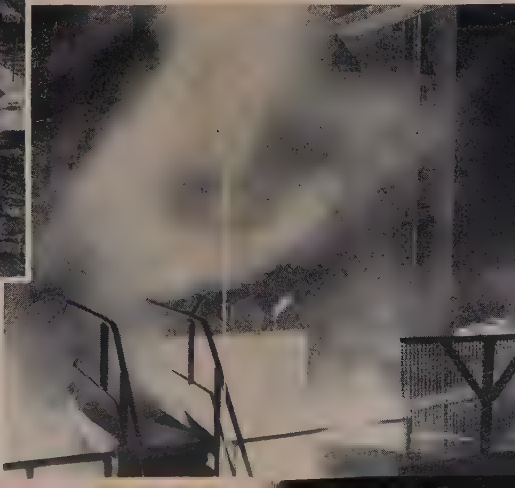
The concentration of nickel-copper minerals by flotation at Copper Cliff, Ont.

SULPHUR

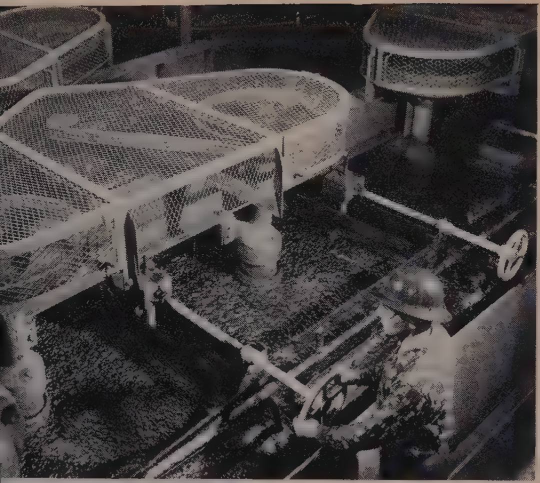
Jumping Pound natural gas and sulphur recovery plant in southern Alberta. In 1960 about 30 p.c. of Canada's requirements of sulphur was recovered as a by-product in the cleansing of natural gas.

BY-PRODUCT IRON

TITANIUM



-COPPER



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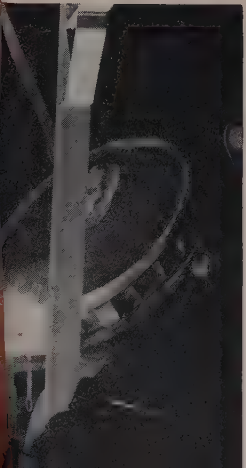
At Kimberley, B.C., Western Canada's first iron-reduction plant is in operation against a backdrop of the famous Sullivan Concentrators. Roasted iron oxide produced from pyrrhotite (iron sulphide) in the fertilizer plant (foreground) is sintered in the iron plant (centre) before undergoing electric smelting in the plant at the right to produce pig iron.



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Casting titanium slag at Sorel, Que.

IRON ORE

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Large open-pit mine and concentrator at Lac Jeannine in northern Quebec. Although the whole Quebec Cartier operation is still in the development stage, shipments of concentrates began in mid-1961.

STEEL

↑

Oxygen steel-making converter being charged with liquid pig iron from the blast furnaces. After charging is completed, the converter is tipped upright and the lance carrying the oxygen at high pressure is lowered into the vessel to produce liquid steel.

The application of this basic process to other materials for production of nickel, cobalt and copper has been demonstrated in both laboratory and pilot plant, and a continuing program of research and development is maintained to improve process details and broaden the application.

Preliminary figures for 1960 show that once again nickel became the leading metal with a production of about 427,283,000 lb. valued at $312,738,000.

By-product Iron

In January of 1961, The Consolidated Mining and Smelting Company of Canada Limited produced pig iron in its new smelter at Kimberley, B.C. The unique feature of this plant is the use of roasted pyrrhotite concentrate as the source of iron.

It is estimated that 28,000,000 tons of pyrrhotite tailings have accumulated from the concentration of lead-zinc ore from the great Sullivan mine. This concentrate is roasted to provide sulphuric acid for the manufacture of phosphate fertilizer. The iron calcine from the roaster is being treated on a sintering machine for use in an electric reduction furnace.

Annual capacity of the furnace now in operation is 36,500 tons of pig iron. As markets expand, electric smelting facilities will be developed and a basic oxygen furnace for the production of steel ingots as well as light steel rolling-mill facilities are contemplated. Thus, a fully integrated electric smelting plant for the production of steel shapes will be developed to serve the growing needs of Western Canada.

Titanium and Remelt Iron

Titanium is a low-density silvery-white metal that owes its importance to a combination of lightness, strength and resistance to corrosion. Because of its high strength-weight ratio, titanium and its alloys have special application in the aircraft industry, particularly in jet aircraft and guided missiles. There is no commercial production of titanium metal in Canada at the present time but titanium metal supplied by imports of sponge, ingots and billets is used in the production of aircraft components by several Canadian companies. The Mines Branch conducts investigations on various phases of titanium research from processing of ores to methods for production and fabrication of its alloys.

Canada's titanium industry is based on the use of ilmenite for the electric-furnace production of titanium-dioxide slag used in the manufacture of pigment and of co-product remelt iron. New records were established in 1960 for shipments of ilmenite by Quebec Iron and Titanium Corporation from Havre St. Pierre, Que., to the smelter at Sorel, and in shipments of titanium-dioxide slag and remelt iron from the smelter to the company's customers.

In 1950 this company began test operations at Sorel on ores from the world's largest known ilmenite deposits at Allard Lake. Concentrates from the up-graded ore analyzing 37 p.c. titanium dioxide and 42 p.c. iron are calcined in rotary kilns to lower the sulphur content. Electric smelting of this product in arc furnaces with powdered anthracite coal yields a slag containing about 72 p.c. titanium dioxide with 11 p.c. iron, and a low phosphorus iron containing about 0.12 p.c. sulphur and 2.25 p.c. carbon. This remelt iron is ladle-desulphurized to a low-sulphur content, and other constituents adjusted as necessary before casting into pigs. Production in 1959 amounted to 145,959 tons. In a recent expansion program the number of furnaces has been raised to eight, designed to consume 2,400 tons of beneficiated ore daily to produce 400,000 tons of titania slag and 300,000 tons of high-grade iron annually.

The only current producer of titanium-dioxide pigment is Canadian Titanium Pigments Limited at Varennes, Que., which uses the titanium-dioxide slag from the Sorel smelter. Sulphuric acid, the other main ingredient used in the manufacture of the pigment, is made in the company's contact acid plant adjoining the pigment processing plant. Capacity is rated at 18,000 tons of pigment a year, present output going to domestic producers of paints, paper, rubber, plastics, floor tile, linoleums, etc.

Magnesium

Early in World War II, interest was reactivated in magnesium, a metal much needed at that time. This led to the development of the Pidgeon process based on the reduction of calcined dolomite by ferrosilicon in a vacuum. A very high purity magnesium metal that can be successfully alloyed was achieved by this method. Between the years 1942 and 1945, Dominion Magnesium Limited at Haley, Ont., produced 20,000,000 lb. of high-purity metal from the abundant dolomite ores in that area.

Less Common Metals

A number of metals virtually unknown only a few years ago are now in the limelight of scientific experimentation as the metallurgist seeks the unique characteristics required in an atomic and space age.

Canada's only producer of lithium concentrates and products is Quebec Lithium Corporation which has a mine and mill located at Lacorne, Que. Drilling at the property has indicated one of the largest spodumene deposits in the world. In 1960 the company constructed a lithium-chemical plant at the mine site. Initial feed for this refinery was 50 tons of chemical-grade spodumene concentrate per day having a yield of 12,000 lb. of lithium carbonate. Lithium compounds are used chiefly as ceramic raw materials and in lubricating greases. Common applications include use as a constituent in storage batteries and refrigeration systems. Looking to the future, lithium has potential uses in atomic energy applications and in solid propellants.

During the past five years considerable interest has been aroused by the finding of large low-grade niobium deposits scattered intermittently between Algoma, Ont., and Montreal, Que. Special attention has been given to the occurrences in the Oka area where niobium is found in three different minerals, pyrochlore, perovskite and niocalite; the last—an unusual mineral—was recently identified by an officer of the Mines Branch. Detailed mineralogical studies have been carried out on these different minerals and results made available to the companies interested in the deposits. At least one company has developed a flotation process and has erected a plant for the production of pyrochlore concentrates. Niobium metal, virtually free of other metallic contaminants, has been prepared in the Mines Branch laboratories. The metal was produced from niobium pentachloride which is derived from pyrochlore concentrate. The addition of small quantities of niobium to carbon steel results in the improvement of the mechanical qualities of the steel and it is expected that substantial amounts will be used for this purpose as well as in high temperature alloys. Because of its resistance to corrosion, niobium will have important applications in the chemical field.

Beryllium, a valuable metal used widely as a hardening agent in copper alloys, has important applications in nuclear reactors as a moderator and reflector of neutrons and as sheathing for fuel rods. It has not yet been produced from any deposits in Canada. A large complex orebody with a significant content of beryllium oxide has been discovered at Seal Lake in Labrador. Mineralogical investigations conducted at the Mines Branch have led to the isolation of several interesting minerals. The chief ore mineral of this deposit is barylite and a comprehensive study is being made of suitable methods for the recovery of beryllium values. At the present time various mineral-dressing techniques are being applied.

Cesium is one of the metals with potential in this field. The Mines Branch is conducting a co-operative study with the Chemalloy Corporation of cesium-bearing pollucite deposits at Bernic Lake in Manitoba. This is a most unusual deposit because of the remarkable combination of metallic elements that it contains. Mineralogists at the Branch have made substantial progress in the study of the mineralogy, the mineral associations, and the distribution of the elements among the minerals found. The nature of this deposit can be considered an alkaline complex in which the metals cesium, rubidium and lithium are prominent, with minor amounts of tungsten, tin and tantalum. An acid leaching process for the extraction of cesium has been developed on a laboratory scale by the Branch. An important use predicted for cesium is as a fuel for ionic-drive rocket engines for space flight. It will have many applications in chemical and metallurgical processes, for example as a catalyst in hydrogenation, as well as in the medical field. However, there is no established commercial market at the present time. The deposits are, accordingly, considered as a future resource with research being carried out in advance of industrial requirements.

Iron Ore

Between 1886 and 1924, 6,500,000 tons of iron ore were produced in Canada but during the following 14-year period no iron ore shipments were recorded. However, production was resumed in 1939 when Algoma Ore Properties Limited brought its Helen mine in the Michipocoten area back into production and since that time there has been a continuous growth in this industry, particularly since 1954 when first shipments were made from the Quebec-Labrador deposits. In 1959, producers' shipments reached an all-time high of 21,488,325 tons valued at $192,666,101.

Most of the recent growth has been based on large reserves of direct-shipping ores found in Labrador and Quebec and, to a lesser extent, in Ontario. Much more important are the technological advances in iron ore beneficiation which make possible the exploitation of many low-grade iron formations that are relatively common in these areas. These advances, combined with the inability of direct-shipping deposits to meet the demand for iron ore, which is increasing particularly in the United States, assure the growth of the industry and the accompanying expenditure of large sums of capital. An important new source of supply is the development by Quebec Cartier Mining Company in the Lac Jeannine area. Approximately 20,000,000 tons of crude ore grading 30 p.c. iron from one open pit mine will be required to produce 8,000,000 tons of concentrate annually.

Beneficiation of iron ore has received great impetus from steel producers in recent years as the emphasis has shifted from cost of ore to the cost of iron in the ladle, so that research and technology on both the grade and structure of the ore for blast furnace feed are essential.

Crushing and screening is the simplest form of beneficiation and practically all direct-shipping ores receive this treatment. It is applied by Iron Ore Company of Canada to its Schefferville ores. Concentration by Humphrey Spirals is a water gravity separation process which will be used on the coarser specular hematite ores of the Wabush Lake–Mount Wright–Mount Reed belt by Quebec Cartier Mining Company, Iron Ore Company of Canada and others. Typically, on iron ores consisting of magnetite, magnetic methods are most suitable. These methods may also be applied to ores containing hematite by first converting hematite to magnetite in a preliminary magnetic roast. The sintering process, the oldest and most widely used method of agglomeration, produces a porous, strong sinter cake. Algoma Ore Properties Division of the Algoma Steel Corporation, Limited use this process for their siderite-containing ores while the Hilton Mines and Marmoraton Mining Company Limited use the other commonly applied agglomeration method—that of pelletizing—in the treatment of their fine magnetic concentrates.

The most obvious reason for the rapid development of iron ore deposits in Canada and sharply increased tonnages of shipments to the United States is the need of the steel industry of that country to secure an increased volume of ore from dependable and long-term sources of supply on economic terms. Iron ore represents a two-way traffic between the United States and Canada but it is only since 1953 that Canada has been a net exporter.

The Steel Industry

Steel is one of the best barometers of a nation's industrial growth and during the past two decades the progress made by Canada's steel industry has been remarkable. In 1939, steelmakers of this country produced 1,551,054 tons of steel ingots and castings and by 1959 had achieved a production of 5,921,728 tons. Despite the rapid growth of the industry since the close of World War II and its increased diversification, the domestic industry continues to supply only about 70 p.c. of steel mill products that are consumed. The remainder, consisting mainly of plate, heavy structurals, skelp and wide sheet, is supplied in whole or in part through imports chiefly from the United States, with smaller amounts coming from the United Kingdom, Western Europe and Japan.

Four fully integrated companies are the nucleus of the Canadian steel industry: The Steel Company of Canada, Limited, Hamilton, Ont.; Algoma Steel Corporation, Limited, Sault Ste. Marie, Ont.; Dominion Steel and Coal Corporation, Limited, Sydney, N.S.; and Dominion Foundries and Steel, Limited, Hamilton, Ont. During 1960, production from these four companies amounted to approximately 5,300,000 tons and an additional 500,000 tons were produced by a number of electric smelting plants.

Noteworthy developments have taken place during the past few years. Companies have increased capacities and adopted many changes in technology which include new types of concentrated furnace feed and more efficient iron and steelmaking processes.

The Steel Company of Canada, Limited, which produced 2,152,000 tons of steel in 1960, is completing a $60,000,000 expansion program which will both diversify output and increase the company's capacity to 3,000,000 tons a year. Included in this program is a second electrolytic tinning line which will double the capacity for the manufacture of tin plate, a new $10,000,000 continuous-weld pipe mill now in operation at Contrecoeur, Que., and a fifth open hearth furnace of 400-ton capacity.

Dominion Foundries and Steel, Limited produced 1,000,845 tons of steel ingots and castings in 1960. This company was the first steel producer in Canada to introduce the basic oxygen process. Expenditures on new plant facilities totalling $55,000,000 during the past two years have been made by this company. Major additions included three new stands in the hot-rolling mill, a 56″ cold-rolling mill and a third oxygen gas producing plant. In 1960, a third blast furnace, a second continuous-galvanizing line, four new soaking pits and additions to the oxygen steelmaking plant were made. Ingot capacity is now rated at 1,250,000 tons a year.

Algoma Steel Corporation, Limited, which produced 1,278,000 tons of steel ingots and castings in 1960, has also increased capacity in a program that commenced in 1956. An important addition is Canada's first wide-flange beam mill which will produce wide beams not previously made in this country. During the four years prior to construction of the mill in 1960, Canada's imports of wide-flange beams averaged 200,000 tons annually. Algoma Steel was the second producer to use the basic oxygen steelmaking process.

Dominion Steel and Coal Corporation, Limited increased capacity at its Sydney Mines works in 1959 from 930,000 tons to 1,000,000 tons annually. In 1960, production reached 864,300 tons.

A wide range of alloy and specialty steels is produced by Atlas Steels Limited in its plant at Welland, Ont. A continuous steel casting machine, one of the first on this Continent, is in operation there. The company has installed a hot planetary mill that will take slab from the continuous casting machine and in a single pass convert it to a thickness of approximately one-quarter inch. These and other recently installed facilities place Canada in a favourable position for the economical production of stainless steel mill products.

Crucible Steel Company of Canada, formed in 1959 to acquire the steelmaking facilities of Sorel Industries Limited at Sorel, Que., is now in operation and has announced its intention of producing a wide variety of carbon and alloy tool steels, stainless steel and other alloy steel products for domestic and export trade.

New Trends in the Steel Industry.—The growing use of low-cost tonnages of oxygen in the production of both iron and steel is a significant trend in the industry. During the past six years, the basic oxygen process has become firmly established as an important method of refining blast furnace hot metal into steel. This is an oxidation process similar to the open hearth furnace but operating at a much faster rate by top blowing a molten bath of iron with gaseous oxygen.

The basic oxygen method uses high-purity oxygen to produce quality steel at high-tonnage rates for a low cost. The furnace or converter used is a refractory-lined pear-shaped vessel into which is charged molten pig iron from the blast furnace and a limited amount of scrap. Oxygen is blown onto the molten bath surface through a water-cooled lance located centrally in a vertical position. Because of the high rate of oxygen supply, oxidizing reactions are very much faster than in the open hearth and existing vessels can produce over 100 tons of steel an hour. The bulk of the steel produced in North America has been in the low-carbon range but the basic oxygen method is capable of producing a wide range of carbon and alloy steels with low nitrogen, phosphorus, sulphur and hydrogen contents.

The present basic oxygen process capacity in North America is 5,500,000 tons per year. Of this total, approximately 1,500,000 tons of capacity is located in Canada, at Dominion Foundries and Steel and at Algoma Steel Corporation.

The open hearth furnace continues to improve in steel production rate and economy by using oxygen which makes it more competitive with the basic oxygen process. The blast furnace method of producing iron is by far the most important at present because it enables quantities of the metal to be produced at a relatively low cost. Dominion Foundries and Steel is the first company to apply heavy oils for the partial displacement of coke in the blast furnace process on a commercial basis, and other Canadian companies are actively considering this practice of introducing fuels through the tuyères of the blast furnace along with the air blast to achieve improved fuel economy. Although the cost of construction of a blast furnace is enormous and there is comparatively little flexibility in its operation, it is expected that it will continue to be the predominant iron producer in large centres of population. However, electric smelting and direct reduction plants of comparatively small capacity will be constructed in various parts of the country, the type of process depending on local market conditions.

In recent years another new development is being applied in the steel industry. This is the use of vacuum both for degassing and for melting of steel. It has been shown that small amounts of gases and impurities in steel can be removed by vacuum methods to produce a purer and more homogeneous product with higher physical properties. Research conducted at the Mines Branch has included a broad program on vacuum arc melting and vacuum degassing either by applying vacuum to the ladle or by stream degassing as the steel is poured. The main benefit is removal of dissolved gases, principally hydrogen.

Important also is the application of direct iron reduction methods for the production of pig iron or semi-steel and sponge iron which may be used in the electric steelmaking furnace to produce high-quality steels. An expanding market may be expected for these products, particularly in Western Europe in areas where supplies of scrap metal are diminishing or where existing scrap contains prohibitive amounts of impurities. Strategic-Udy Metallurgical Limited at Niagara Falls, Ont., has under development a process for the treatment of low-grade and complex ores to produce pig iron and semi-steel. A second process under development is the production of sponge iron pellets by Freeman Corporation, Cap de la Madeleine, Que. Three other processes are under development in Canada and extensive trials have been made of processes applicable to the complex ores of the Peace River district by Premium Steel Mills Limited.

Subsection 2.—Industrial Minerals

The total value of industrial mineral production increased in 1960 to a new high of $503,967,000. Several minerals recorded gains and new production records were established for asbestos, nepheline syenite, elemental sulphur and sodium sulphate. The highlights of a number of significant developments in this segment of the mining industry during the year are outlined below.

Asbestos.—During 1960, Canadian asbestos mines shipped a record 1,141,000 tons valued at $119,000,000 to world markets. While Canada has long occupied the most prominent position in world asbestos, that position is being challenged by growing production in the U.S.S.R.

Chrysotile, the most widely used variety of asbestos, occurs in several places in Newfoundland, Quebec, Ontario, British Columbia and the Yukon Territory. The main centre of the industry is, however, in the Eastern Townships region of Quebec where 12 mines account for more than 90 p.c. of the nation's production. Two other mines are located elsewhere in Canada—one in northern Ontario and one in northern British Columbia. A major development in 1960 was the decision in October to prepare the Newfoundland deposit of Advocate Mines Limited for production in 1963. The decision followed an intensive exploration and testing program by Canadian Johns-Manville Company Limited, in association with Patino of Canada, Amet Corporation Incorporated, and Financière Belge de L'Asbest-Ciment S.A. The property, located at Baie Verte on the Burlington Peninsula, is a potential source of fibre for the asbestos-cement industry. Murray Mining Corporation Limited continued exploration of a deposit near Deception Bay in northern Quebec. Further diamond drilling added to the company's estimate of possible ore reserves.

Early in 1960 an important new use for short fibre became apparent. The addition of 2 or 3 p.c. of group-7 asbestos to asphalt paving mixture has been demonstrated to increase the resistance of road surfaces to loads and temperature variations, improving flexibility and resistance to cracking, especially at low temperatures. Johns-Manville Corporation, which pioneered the development, forecasts an eventual market of 500,000 tons annually for this purpose.

Construction Materials.—Continuing activity in the construction industry and in road-building in Canada in 1960 sustained the production of those mineral commodities used in construction at a level close to the peak year of 1959. The increasing market for ready-mixed concrete, precast shapes and prestressed structures is reflected in the establishment of new facilities for the preparation of these materials and in the evident trend toward improved quality and more uniformity in aggregates.

For several years after World War II, considerable cement was imported into Canada from the United States and elsewhere but growth of the Canadian industry has reversed this trend and Canada now exports cement to the United States. Expansion continued in 1960; the completion of one new plant and additions to others increased capacity of the industry by 14 p.c. to more than 8,500,000 tons. At the end of the year there were 19 cement plants in operation in all provinces except Nova Scotia and Prince Edward Island. The cement plant built by Miron and Frères Ltée at St. Michel, Montreal, and completed early in 1960 is Canada's second largest. It is a dry-process plant which uses new techniques for automatic control and contains the largest kiln of its type in the Western Hemisphere—a 550 x 15-ft. unit with an annual capacity of over 4,000,000 bbl. To keep pace with growing markets in the western provinces, the Edmonton, Alta., plant of Inland Cement Company Limited was enlarged by the addition of a 340-ft. rotary kiln, increasing its capacity by 50 p.c., and the capacity of the Regina plant of Saskatchewan Cement Company was also increased.

Lightweight aggregates were still in prominence in 1960 and late in the year two new plants were under construction in Western Canada. There were in operation throughout the country 10 plants expanding clay and shale, 10 processing vermiculite and eight expanding perlite. Other plants were processing slag from the steel industry into lightweight aggregate. It may be noted that all flooring slabs in the 42-storey structure forming the nucleus of the Ville Marie Plaza project in Montreal are being cast in lightweight aggregate concrete.

The value of production of the clay products industry decreased in 1960, reflecting the decline in housing construction. Cooksville-Laprairie Brick Limited is building a new plant near Ottawa for the manufacture of brick and tile from local shale.

Potash.—While there was no production of potash in 1960 from the extensive deposits in Saskatchewan, it is anticipated that two companies will be mining the mineral by late 1961 or early 1962.

At mineable depths varying from 2,800 feet to 3,400 feet, what is believed to be the world's largest high-grade deposit of potash, in the form of sylvite and carnallite, occurs under a large area of southern Saskatchewan. Reserves have been estimated at over 6,400,000,000 tons of recoverable potash grading more than 25 p.c. K_2O. Attempts to win potash from this area have encountered technical difficulties caused by the wet and largely unconsolidated strata known as the Blairmore formation.

In 1959, the Potash Company of America Limited penetrated this formation near Saskatoon with a circular concrete shaft by the freezing method and potash was mined for several months but ceased when difficulty was experienced in maintaining a dry shaft. Since that time extensive shaft repairs have been in progress. International Minerals and Chemical Corporation (Canada) Limited, at Esterhazy, sank a concrete shaft to the Blairmore without difficulty but attempts to penetrate this zone by chemical grouting were not successful. The freezing method was then decided upon and experienced German engineers were engaged for shaft-sinking. From an underground working chamber a ring of holes was drilled through the Blairmore and calcium chloride refrigerant circulated at −50° F. to freeze the shaft area. When the area was frozen, shaft-sinking was resumed using cast iron tubbing, a method unique in Canadian mining. Seventy five-foot-high segmented cast-iron rings were installed in a 300-foot section of the shaft. These rings, manufactured in Canada to close tolerance, were sealed by lead gaskets to form a strong and impervious lining; the finished lining comprises 2,800 tons of cast iron. It is estimated that developing the Esterhazy mine to production will cost $25,000,000. Meanwhile, other companies continue the exploration of potash deposits in Western Canada. World production is expected to rise by 40 p.c. during the next ten years because of the growing demand for potash-bearing fertilizers.

Sulphur.—With the development of natural gas fields in the western provinces, Canada has emerged as a major source of elemental sulphur. During 1960, 837,000 tons (both elemental and sulphur equivalent of smelter gases and pyrite) were shipped to consumers, placing Canada among the top five leading sulphur-producing nations of the world.

Until 1952, Canada's requirements for the elemental form were supplied by imports; today, large-scale exports are necessary to market current production recovered as a by-product of natural gas processing. Based on estimates of gas reserves, the potential for recovery is between 150,000,000 and 300,000,000 tons of sulphur.

Although pyrite, other sulphides and smelter gases provide Canadian industry with much of its sulphur requirements, more than 30 p.c. of the 1960 production was recovered as a by-product in the cleansing of natural gas in Western Canada before transmission to market. By the end of the year, seven recovery plants in Alberta, one in British Columbia and one in Saskatchewan were in operation and seven others were in various stages of construction. It is estimated that annual capacity will reach 1,500,000 tons of elemental sulphur by the end of 1961.

The California Standard Company plant at Nevis, Alta., went on stream early in 1960 with an annual capacity of 40,000 tons; local gas is fed to this plant. By the year end, the British American Oil Company Limited was completing a 250-ton-per-day plant at Homeglen-Rimbey, south of Edmonton, and the Canadian Oil Companies Limited were completing a 110-ton-per-day plant at Innisfail, Alta. Late in the year, plans were announced for the construction of two large plants in southern Alberta by Jefferson Lake Petrochemicals of Canada Limited and Shell Oil Company of Canada Limited at east Calgary and Waterton Park, respectively. The combined output potential of these two plants will be more than 2,000 tons daily.

Other Minerals.—Canadian production of barite was more than a third lower in 1960 than in 1959, reflecting competition in export markets from Mexico, Peru and Greece. Normally, 90 p.c. of this country's production is exported. A new plant was completed at Onoway, Alta., by Baroid of Canada Limited for the processing of barite and bentonite for the oil industry in Western Canada.

Standard Lime Company Limited increased capacity of its Joliette, Que., facilities for the production of high-calcium lime. A new plant incorporating a 200-ton-per-day rotary kiln was constructed at a cost of $1,000,000.

By the end of 1960, Quebec Lithium Corporation had almost completed, at its mine site near Barraute, Que., a new plant for the production of lithium carbonate from decrepitated spodumene concentrates. This is the first such facility to be established in Canada. The company is planning to resume milling, after a year-long interruption, to produce glass-grade material.

Subsection 3.—Petroleum and Natural Gas

For the petroleum and natural gas industry, 1960 was a better year than 1959. New production and value records were set. Crude oil output at 192,308,250 bbl. was about 4 p.c. higher than the previous high of 184,778,497 bbl. produced in 1959 and the value of crude oil production at $432,495,700 was moderately above the 1959 value of $422,092,535. Although the value of natural gas produced in Canada is well below that of crude oil, the percentage gain in 1960 was much greater—production at 504,500,000 Mcf. was 21 p.c. above 1959 production and there was a corresponding rise in value to $48,027,110.

The shift westward and northward in exploration continued during 1960, Manitoba and Saskatchewan attracting less exploration activity than in preceding years. Altogether, 2,446 wells were drilled in 1960, somewhat fewer than in 1959, but there was a higher rate of new discoveries in drilling, with 120 indicated oil and gas finds. The greater ratio of gas to oil discoveries than in previous years reflected the increased interest in natural gas search following Federal Government permission to export about 1,000 Mcf. of gas per day to the United States. The average depth of wells drilled in 1960 was 5,455 feet, about 400 feet more than in 1959; this is indicative of the greater depth necessary to reach potentially productive sedimentary strata in British Columbia and in the foothills area of Alberta. Canada's deepest oil well was completed at Fording Mountain, B.C., at a depth of 16,540 feet.

A moderate increase in petroleum and natural gas reserves was recorded in 1960. At the end of the year, crude oil reserves were placed at 3,700,000,000 bbl. and proved recoverable reserves of natural gas were conservatively estimated to be 26,900,000,000 Mcf. Capital investment in Canadian petroleum and natural gas industries during 1960 amounted to $649,300,000, including expenditures on exploration, development, production, pipe lines, gas processing, petroleum refining and marketing. The rate and scale of development in the petroleum and natural gas industry of Western Canada in recent years is indicated by the production data in Table 1.

1.—Crude Oil and Natural Gas Production in Western Canada, 1954-60

NOTE.—Many of the figures given for 1954-59 have been revised since publication in the 1960 Year Book.

Year	Crude Oil				Natural Gas		
	Man.	Sask.	Alta.	B.C.	Sask.	Alta.	B.C.
	'000 bbl.	'000 bbl.	'000 bbl.	'000 bbl.	Mcf.	Mcf.	Mcf.
1954	2,148	5,423	87,627	—	3,533	105,947	—
1955	4,146	11,317	113,045	—	6,707	130,999	—
1956	5,787	21,077	143,910	148	9,808	144,524	188
1957	6,090	36,861	137,490	345	13,994	179,334	8,275
1958	5,829	44,626	113,276	512	18,819	234,711	63,638
1959	5,056	47,442	129,967	866	33,613	310,407	68,756
1960	4,718	53,000	132,100	950	33,000	370,000	85,067

The natural gas figures in Table 1 do not include gas flared in the field which, in 1954, amounted to about 20 p.c. of gross gas production; in 1959, an amount equal to only 12 p.c. of gross production was flared. Increased demand for natural gas has made economical the gathering of gas which might otherwise have been flared. There has also been continuing progress in gas conservation procedures.

British Columbia.—Exploration in British Columbia in 1960 remained concentrated in the northeastern portion of the province where a number of important natural gas discoveries were made. Five new oil pools and 13 new accumulations of natural gas were indicated by exploratory drilling. An important gas discovery was made at Pocketknife, about 115 miles northwest of Fort St. John. Successful exploratory wells were also drilled in the Kotcho Lake and Fort Nelson areas. Additional gas discoveries were made at Laprise Creek, about 90 miles northwest of Fort St. John, in quantities sufficient to warrant connection of the field to the pipeline system of Westcoast Transmission Company Limited. About 60 p.c. of the 137 development and exploration wells drilled were successful.

The market for crude oil remains local in nature because of the lack of an oil pipeline joining the producing area to large markets. Consequently, British Columbia crude oil production remained at about 2,500 bbl. per day, although the potential output was about 12,000 bbl. per day. The value of natural gas production continues to be almost five times the value of crude oil production.

Alberta.—Exploratory drilling in Alberta resulted in 32 oil discoveries and 60 gas discoveries in 1960. Of the 1,643 exploration and development wells drilled, only 25 p.c. were failures. This favourable result reflected an emphasis on drilling in, or adjacent to, producing fields. Of all wells drilled in Western Canada in 1960, 67 p.c. were in Alberta. Although no fields as important as those found in preceding years were discovered, major extensions to several existing fields were made. In the Swan Hills region, 115 miles northwest of Edmonton, continued success in drilling enlarged the Judy Creek field to fifth place in estimated oil reserves, and by the year-end it was nearly joined to the larger Swan Hills field. These two fields combined, along with the adjacent West Judy Creek field, now have reserves approaching those of the Pembina field, Canada's largest oil field which has reserves of more than 650,000,000 bbl. Elsewhere in the province, there were a number of oil discoveries which may prove important after further development and appraisal.

Saskatchewan.—Exploratory drilling continued to decline in Saskatchewan during 1960. The number of exploratory wells dropped well below the 265 drilled the previous year because of the lack of significant discoveries. Exploratory drilling resulted in 14 oil and three gas discoveries. In total, 577 wells were drilled, the majority being in the field-development category, and 436 of them were successful. Of all wells drilled in Western Canada in 1960, slightly less than 25 p.c. were in Saskatchewan. Drilling by the year-end had nearly merged the Weyburn and Midale fields which together have about 275,000,000 bbl. of recoverable oil reserves.

Manitoba.—The 11 exploratory holes drilled in Manitoba resulted in only one significant oil discovery—near the Virden-Roselea field. Of the 66 wells drilled, 48 were successful oil development wells. The province has no natural gas production.

Northwest Territories.—Of the 23 wells drilled in the Northwest Territories during 1960 one important new gas discovery was made—this was at Celibeta Lake. In the Arctic islands, which attracted much attention in 1959 as a possible oil-producing region, there was some levelling off in activity but about 42,000,000 acres of the more favourable potential oil-producing lands were still held by oil companies at the end of the year.

Eastern Canada.—Exploration drilling in Ontario, mainly for natural gas, declined from 116 wells in 1959 to 98 in 1960. The average depth of these wells was considerably less than those drilled in Western Canada and averaged about 1,900 feet. The exploratory drilling resulted in two oil wells and eleven gas wells. Work in Lake Erie continued where 38 exploratory and development wells were drilled. In the Maritimes, four exploratory holes were drilled without success.

Petroleum Refining and Marketing.—In 1960, two large new refineries came on stream. In Saint John, N.B., a 40,000-bbl.-per-day oil refinery began operations in May, resulting in a sharp decrease in imports of refined petroleum products into the Atlantic Provinces but causing an increase of foreign crude oil imports to the area. In Montreal, the start of production of a new 25,000-bbl.-per-day refinery raised to six the number of oil refineries there. These two new refineries were mainly responsible for the 8.5-p.c. increase in Canada's refining capacity in 1960 to 950,260 bbl. per day. Canada now ranks fourth in world refining capacity, following the United States, the Soviet Union and the United Kingdom. The rate of growth of the petroleum refining industry from 1940 to 1960 is indicated in Table **2**.

2.—Petroleum Refining Throughput Capacity, by Region, as at Dec. 31, 1940, 1950 and 1960

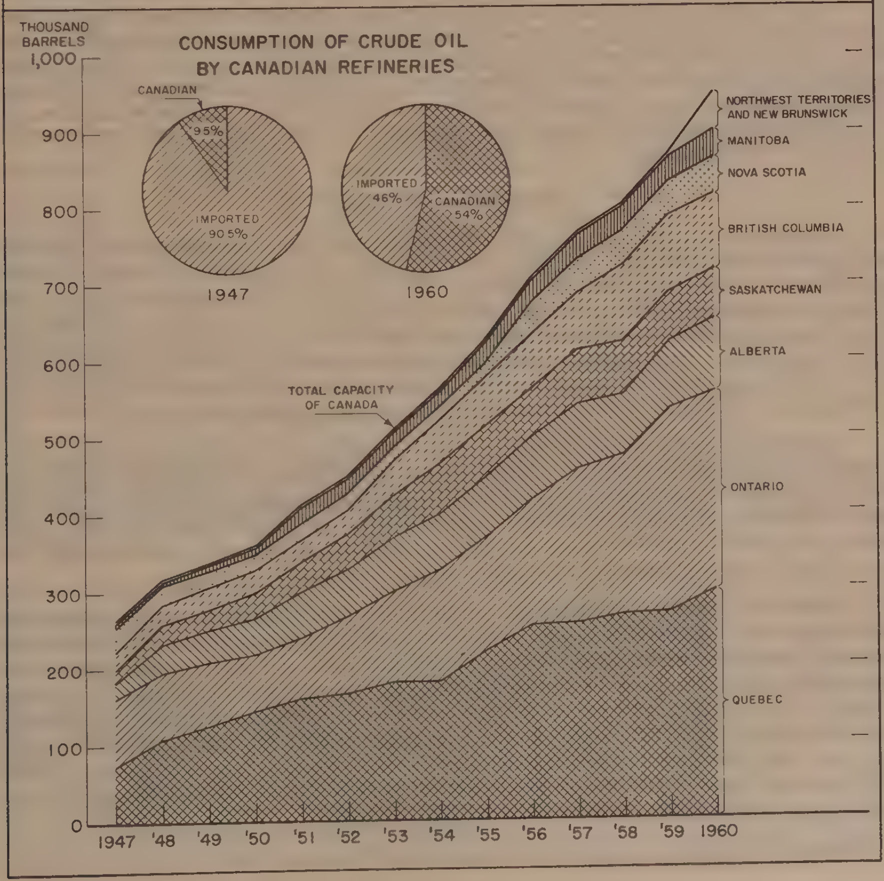
Region	1940		1950		1960	
	bbl. per day	p.c.	bbl. per day	p.c.	bbl. per day	p.c.
Maritime Provinces	32,750	15.1	22,300	6.2	96,800	10.2
Quebec	64,500	29.6	143,000	39.8	297,000	31.3
Ontario	57,500	26.6	75,200	21.0	260,820	27.4
Prairie Provinces and Northwest Territories	38,020	17.5	89,525	25.0	196,940	20.7
British Columbia	24,500	11.3	28,850	8.0	98.700	10.4
Canada	**217,270**	**100.0**	**358,875**	**100.0**	**950.260**	**100.0**

Domestic sources supplied 54 p.c. of Canadian refinery receipts in 1960, or 409,000 bbl. per day of the total of 759,000 bbl. per day received. Although Canada has sufficient producing capacity to supply refinery needs it has not been economically feasible for Quebec and the Maritimes to use domestic crude oil. All of the western provinces, most of Ontario and some of the northern United States use Canadian crude. The amount of domestically produced crude used in Canadian refineries in 1960 declined slightly from the 1959 total while consumption of foreign crude increased nearly 10 p.c. to 350,000 bbl. per day mainly as a result of the completion of the two new refineries in Eastern Canada. On the other hand, there was a 19.5-p.c. increase in 1960 exports to the northwestern and north-central United States which amounted to 110,000 bbl. per day. The growth in the domestic consumption of Canadian crude and in the consumption of foreign crude in Canadian refineries since 1940 is shown in Table **3**.

3.—Domestic and Foreign Crude Oil Received at Canadian Refineries, by Region, 1940, 1950 and 1960

Region	1940		1950		1960	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
	bbl. per day	bbl. per day	bbl. per day	bbl. per day	bbl. per day	bbl. per day
Quebec and Maritimes	—	56,040	—	133,364	—	340,000
Ontario	507	41,918	681	68,630	197,100	10,000
Prairie Provinces and Northwest Territories	22,367	1,867	71,422	633	145,700	—
British Columbia	—	16,805	—	21,458	66,200	—
Canada	**22,874**	**116,630**	**72,103**	**224,085**	**409,000**	**350,000**

DAILY CRUDE OIL CAPACITY OF PETROLEUM REFINERIES, 1947-60



Canadian refineries produce at least 85 p.c. of total domestic petroleum product requirements. In 1960, imports of refined petroleum products amounted to 36,000,000 bbl., a decrease of 3,000,000 bbl. from the previous year. Exports of refined petroleum products increased to 3,100,000 bbl. from 2,100,000 bbl. in 1959. Recent refinery construction has resulted in an improvement of Canada's trade position in petroleum products.

Natural Gas Processing and Marketing.—Natural gas is delivered from Western Canada by pipeline as far west as the Pacific Coast and as far east as Montreal. Recently, natural gas has been gaining a larger share of the market for fuels at the expense of coal and oil. In addition, large quantities of natural gas liquids are extracted from natural gas and sold in direct competition in fuel heating markets. Natural gas by-products also find a ready market at petroleum refineries, particularly in areas where the demand for lighter refinery products, such as gasolines, is above average. Sulphur is being extracted from natural gas in growing amounts each year and plant capacity to recover 700,000 tons daily had been installed by the end of 1960 (see pp. 523-524).

Five new gas-processing plants were added during 1960 to bring the total to 37. These have a combined treating capacity for over 2,000 Mcf. of raw gas daily. Canadian natural gas production in 1960 amounted to 504,500,000 Mcf., of which 105,000,000 Mcf. were exported to the United States. During the year, about 6,000,000 Mcf. were imported from the United States. In the Canadian market, Alberta is the largest consumer of natural gas. Its domestic, industrial and commercial requirements in 1960 totalled 138,000,000 Mcf., or 44 p.c. of the total Canadian consumer sales of 314,000,000 Mcf. Consumption in other provinces, on a percentage basis of total sales, was: Ontario 32 p.c., Saskatchewan 9.4 p.c., British Columbia 7.8 p.c., Manitoba 3.4 p.c., and Quebec 3.3 p.c. Natural gas usage in production, processing and transportation accounts for the difference between apparent supply and consumer sales.

Subsection 4.—Coal*

The continued and increasing competition from petroleum, natural gas and imported coal caused further decline in Canada's coal industry in 1959. Greater efforts were made by the industry to meet this competition. Mechanization of underground mining was advanced, especially in the Cape Breton Island coal mines. In the mines of the Dominion Coal Company Limited, the Dosco ripper-type continuous mining machines were modified by equipping them with wedge and shearing bar in order to improve the size consist of the coal. Development work was undertaken for the installation of mechanical mining in a small underground mine in New Brunswick working on an 18-inch coal seam.

Greater care and attention in the operation of mining equipment and increased coal preparation facilities are expected to improve the over-all quality of Canadian coals. Additional facilities for cleaning and drying various sizes of coal, in particular fine coal, were put in operation at various collieries in both Eastern and Western Canada. The implementing of quality control measures through coal sampling and analysis at various collieries should lead to greater customer satisfaction with coal as a fuel.

Assistance to the coal industry was given by the federal and provincial governments through research programs in co-operation with industrial organizations. The problem of fine coal production and disposal received much attention and research was directed toward improved mining methods and beneficiation by cleaning and briquetting. Development of new and modified combustion equipment was undertaken with greater efficiency and versatility in view. Through continued programs of sampling and analysis of marketable coal, the governments aided the industry in their efforts to maintain quality control. Surveys were made of the coking properties of coals in relation to their preparation for export markets and their use in prospective steel industries.

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* This review covers the year 1959.

The Dominion Coal Board, through financial assistance in the acquisition of new equipment and subventions on coal transportation, continued assistance to the coal industry. Almost 26 p.c. of the coal production was moved with the aid of subvention payments, although the total tonnage to which this applied was 9.9 p.c. less than in 1958.

Production of coal in Canada for 1959 was down more than 9 p.c. to 10,626,722 tons, the lowest since 1909 and a drop of 44.5 p.c. from the record production of 19,139,112 tons in 1950. The average value for all coal was $6.952 per ton or 30.33 cents per million Btu. This declining production and accompanying mine closures were reflected in the employment at the mines, where the number of man-days dropped from 2,848,615 in 1958 to 2,481,498 in 1959—almost 13 p.c. Nova Scotia, the major coal-producing province, was most affected by the declining coal markets; the decrease in coal-mine employment in that province amounted to 18.4 p.c.

The major part (65.4 p.c.) of the coal produced was bituminous, valued at $8.990 per ton or 34.47 cents per million Btu at the mine. Subbituminous accounted for 16.3 p.c. of production and lignite for 18.3 p.c. The average value of subbituminous coal was $4.430 per ton, this being 23.69 cents per million Btu, and the value of lignite was $1.924 per ton at 12.44 cents per million Btu. Bituminous coal production decreased 10.4 p.c. and lignite 13.6 p.c., but subbituminous increased 2.9 p.c. as a result of the demand by thermal power plants in Western Canada.

The proportion of strip-mined coal continued to increase, more than 38 p.c. of the output being won by stripping methods in 1959. The output per man-day of coal from Canada's strip mines was 13.18 tons in 1959 compared with 3.00 tons from underground mines. This represents a decrease of 1.88 tons for strip mines and an increase of 0.11 tons for underground mines. The over-all output per man-day increased from 4.10 to 4.28 tons.

The consumption of coal in Canada decreased 2.6 p.c. in 1959 to 24,548,259 tons, representing a drop of 45.3 p.c. since 1950. More than 57 p.c. of the coal consumed was imported, about 89 p.c. of it being bituminous coal used in Ontario and Quebec. Total imports of coal were about 2 p.c. higher than in 1958. The production of coke used about 5,600,000 tons of coal in 1959, of which about 86 p.c. was imported. The sale of coal by retail fuel dealers to the commercial and household heating markets was steady but industrial consumption decreased about 8.2 p.c. to 10,024,779 tons, of which more than 53 p.c. was imported. Use of coal by railway locomotives dropped to 554,260 tons from 1,393,823 tons in 1958 and declined almost 11,000,000 tons in a decade. Exports of Canadian coal in 1959 amounted to 473,768 tons compared with 338,544 tons in 1958. Most of this went to the United States and Japan for blending in the manufacture of metallurgical coke. The manufacture of briquettes decreased from 204,050 tons in 1958 to 153,134 tons in 1959. The railways used more than 40 p.c. of the total consumption of 175,008 tons.

Coal is produced in five provinces and a large share of the market for the industry is concentrated in Central Canada where there is no coal production. A small amount of coal is also mined in the Yukon Territory. A review of the provincial activities of the industry follows.

Nova Scotia.—Nova Scotia, with a coal production of 4,391,829 tons, accounted for more than 41 p.c. of the Canadian coal output in 1959. Production was 16.7 p.c. lower than in 1958. The coal is high volatile bituminous coking coal mined in the Sydney, Cumberland and Pictou areas, and some non-coking bituminous coal in the St. Rose, Inverness and Port Hood areas on the west coast of Cape Breton Island. The over-all value at the mines increased to $9.957 a ton from $9.554 a ton in 1958. This represents about 37.8 cents per million Btu. The output per man-day was 2.72 tons in 1959 compared with 2.66 tons in 1958.

All Nova Scotia coal comes from underground mines, most of which are mechanized. Coal-washing plants are operated at two of the collieries and prepare about 20 p.c. of the province's coal production. Much of the output is used locally for industrial steam-raising, electric power production, household and commercial heating and the manufacture of metallurgical coke. In 1959 about 62 p.c. of the production was shipped to other provinces, mainly Central Canada. Subvention payments were made by the Dominion Coal Board on the movement of 2,154,034 tons.

New Brunswick.—New Brunswick's production, of which 82.3 p.c. was strip-mined, was entirely high volatile bituminous coal from the Minto area, with a small amount from the Beersville area. The record production of 1,003,387 tons in 1959, about 9.4 p.c. of Canada's output, represented an increase of about 27 p.c. over 1958. Average output per man-day from strip mines was 5.61 tons and from underground mines 1.83 tons. New Brunswick coals had an average value at the mines of $8.319 a ton, amounting to about 34.7 cents per million Btu.

Modern coal-washing plants, equipped with Baum-type or feldspar jigs, are operated at two of the strip-mining operations, enabling the beneficiation of about 45 p.c. of the province's coal output. A large part of the production is used locally for heating, electric power generation, and processing; about 13 p.c. is shipped to Central Canada and about 7 p.c. is exported to the United States. Government subventions aided in the moving of 137,613 tons during 1959.

Saskatchewan.—Coal produced in this province was entirely lignite, mined by stripping in the Bienfait and Roche Percée fields in the Souris area, and amounted to 1,947,380 tons, a decrease from 2,253,176 tons in 1958. This represents about 18 p.c. of the Canadian production. It was valued at the mine at an average of $1.924 per ton and, at 12.44 cents per million Btu, was the cheapest source of coal in Canada. The average output per man-day was 25.35 tons. More than 51 p.c. of the 1959 output was shipped to Manitoba and over 6 p.c. to Ontario for industrial, commercial and household use. Subvention assistance was given on 111,006 tons.

The production of briquettes, manufactured from carbonized lignite and used entirely for commercial and household purposes, decreased 15.4 p.c. to 34,789 tons.

Alberta.—Several types of coal are available in Alberta, ranging from semi-anthracite mined in the Cascade area, to subbituminous. Coking bituminous coals are present in the Crowsnest and Mountain Park areas but, owing to market conditions, they are at present mined only in the Crowsnest area. The coal is used for industrial steam-raising by the railways and for commercial and household heating. There was some export to the United States and Japan for use in the metallurgical industries. In several areas of the foothills, lower rank bituminous non-coking coals are available but production is confined mainly to the Lethbridge and Coalspur areas. The other coal areas produce subbituminous coals used mainly for household and commercial heating and thermal power generation.

Coal production in Alberta increased 0.4 p.c. in 1959 to 2,528,755 tons, this being about 24 p.c. of the nation's coal output. Production had been declining sharply since 1947 when the Leduc oil field was discovered and with the subsequent expansion of the natural gas industry. The 1959 production was about 32 p.c. of that of 1947. Subbituminous coal accounted for about 68 p.c. of the output and production increased almost 3 p.c. The output of bituminous coal decreased 2.2 p.c. to 816,275 tons. Of the total coal production, 47.6 p.c. was won by stripping, the average output per man-day being 17.40 tons compared with 4.50 tons for the underground mines. Bituminous coal was valued at $6.371 per ton and 25.77 cents per million Btu at the mine, and the average value of subbituminous coal was $4.430 per ton and 23.69 cents per million Btu.

Of the provincial production, 2.1 p.c. was shipped to Central Canada, 9.4 p.c. (mainly subbituminous) to Manitoba, 21.6 p.c. to Saskatchewan and 1.9 p.c. to British Columbia. Subvention assistance from the Dominion Coal Board applied on the movement of 323,813 tons of Alberta and British Columbia coal.

The output of briquettes, which are made from the semi-anthracite and low volatile bituminous coals of the Cascade area and the medium volatile coals of the Crowsnest area, decreased from 128,512 tons in 1958 to 99,499 tons in 1959.

British Columbia and Yukon Territory.—In British Columbia coal is mined on Vancouver Island and in the Crowsnest Pass (East Kootenay) district with a small output from the mines in the Inland district. These coals range from high to low volatile bituminous coking coals. Production declined to 751,492 tons, about 7 p.c. of the country's output, with an average value of $6.989 per ton and 25.29 cents per million Btu. About 11.7 p.c. of the output was from strip mines. The average output per man-day was 31.74 tons for strip mines and 3.80 tons for underground mines.

Beneficiation facilities located at Union Bay (Vancouver Island) and Michel (East Kootenay) process nearly all of British Columbia's coal production. Of the total production, 20.8 p.c. was shipped to Manitoba and 1.9 p.c. to Ontario. Negligible quantities were shipped to Alberta and Saskatchewan. About 14 p.c. of the output of coking coal from the Crowsnest area was exported to southwestern United States and Japan for blending in the manufacture of metallurgical coke.

A single briquetting plant operated in the province, producing mostly railway briquettes. Production was down more than 45 p.c. from that of 1958.

In the Yukon Territory 3,879 tons of coal were mined from a single underground mine with an average output per man-day of 2.79 tons. This coal was valued at $15.00 per ton and 65.50 cents per million Btu.

Section 2.—Government Aid to the Mineral Industry

Subsection 1.—Federal Government Aid

The Department of Mines and Technical Surveys.*—The federal Department of Mines and Technical Surveys came into being on Jan. 20, 1950, in the reorganization of the former Department of Mines and Resources. The Department has five branches—Surveys and Mapping Branch, Geological Survey of Canada, Mines Branch, Dominion Observatories, and Geographical Branch. The Department's functions include the administration of the Emergency Gold Mining Assistance Act, the Explosives Act and the Canada Lands Act.

Surveys and Mapping Branch.—The Branch provides the base maps required for use in the development of Canada's natural resources, produces and distributes many Canadian aids to navigation, is responsible for legal surveys of federal lands and provides a national system of levelling and precision surveys for use as geodetic control by federal, provincial and private agencies.

The Geodetic Survey provides the original surveys that form the framework or basic control for mapping throughout Canada and for engineering and surveying projects related to natural resources development. Survey stations are established at fairly regular intervals across Canada and are marked by permanent monuments whose latitudes, longitudes and elevations above mean sea level are determined with a high degree of accuracy.

The Topographical Survey provides topographical maps that show all significant natural and artificial features fundamental to the study and economic development of mineral and other natural resources. The Field Survey Section is responsible for the field surveys that provide ground control for mapping from aerial photographs, and the Air Surveys Section plots and produces maps from these aerial photographs. The National Air Photographic Library indexes, preserves and distributes prints of all aerial photography done by or for the Federal Government. The Topographical Survey also administers the Canadian Board on Geographical Names.

The Legal Surveys and Aeronautical Charts Division makes and records legal surveys of federal Crown lands in the Yukon and Northwest Territories, the National Parks and

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* Revised, under the direction of the Deputy Minister, in the Editorial and Information Division, Department of Mines and Technical Surveys, Ottawa.

Indian lands and reserves. This Division prepares aeronautical charts and electoral maps and prepares and distributes flight manuals.

The Canadian Hydrographic Service is responsible for the charting of the coastal and inland navigable waters of Canada, the analyses of tides and tidal current phenomena and the investigation of water-surface elevations of the St. Lawrence–Great Lakes waterway. The resultant data are published in the form of official navigation charts, volumes of Sailing Directions, Tide Tables and Water Level Bulletins.

The Map Compilation and Reproduction Division prepares, drafts and reproduces maps, charts and plans for lithographic printing in multicolour. The work includes the preparation and photo-reproduction of air chart bases, the reproduction and printing of air information for aeronautical charts, the preparation and printing of topographic maps and the reproduction and printing of hydrographic charts.

Geological Survey of Canada.—The primary function of the Geological Survey is to obtain information on the geology of Canada that will be of assistance in the search for and development of mineral deposits. The results of its activities also provide a basis for the appraisal and conservation of Canada's mineral resources generally (including water supplies), for soil surveys and for the solution of geological problems that frequently arise in construction projects. Reports issued by the Geological Survey include: memoirs with fairly complete descriptive accounts of the geology of particular areas, usually accompanied by geological maps; bulletins dealing with problems rather than areas; papers issued as soon as possible after the close of the field season, treating separately of each area and summarizing the information acquired; and the Economic Geology Series dealing in a comprehensive way with mineral deposits of a particular type. Information circulars, issued in advance of the more detailed reports, contain data of immediate interest to prospectors. Coloured geological maps are issued on various scales from one inch equalling a few hundred feet to one inch equalling eight or more miles, the common standard scales being one inch to one mile and one inch to four miles. Preliminary maps showing the geology are issued shortly after the field season ends for those areas where the search for metals or minerals is active. Metallogenic maps show the Canada-wide distribution of known occurrences of particular metals classified according to the type of deposit.

The Regional Geology Division is responsible for mapping and studying the rocks of the eastern and western segments of the Precambrian shield, and the Appalachian and Cordilleran regions.

The Economic Geology Division investigates the geology of specific mineral deposits, applies and develops geochemical techniques, and maps and studies unconsolidated deposits that mantle much of the country and, in several provinces, carries out surveys of groundwater resources.

The Fuels and Stratigraphic Geology Division includes stratigraphic palaeontology, the geology of fuels (oil, natural gas and coal), subsurface geology, and research on coal. Its function is to establish the character, age, thickness and correlation of both exposed and concealed sedimentary formations and to map the distribution and structure of these formations with the object of determining the economic possibilities of prospective oil, gas and coal bearing areas of Canada.

The Petrological Sciences Division makes mineralogical, petrological, and isotopic studies of Canadian mineral deposits and associated rocks. Laboratories provide mineral identifications for the public, supply officers of the Survey with mineralogical and geochronological data, and permit research on the genesis of ores, fuels and rocks. Systematic mineral collections are maintained and mineral and rock collections are prepared for use by prospectors and educational institutions.

The Geophysics Division gathers, compiles and interprets geophysical data relating to the geology of Canada. Fundamental research is carried out in some phases of geophysical work.

Mines Branch.—Investigations undertaken in Branch laboratories cover a wide range of technical projects of importance to the advance of fundamental research; to the processing of ores, industrial minerals and fuels on a commercial scale; and to the theory and practice of physical metallurgy.

The Mineral Processing Division is concerned primarily with the development of economical methods of mineral dressing and with research toward the improvement of present processing techniques. It is equipped to conduct laboratory and pilot-plant studies involving a variety of procedures: crushing, grinding, gravity concentration, sink and float (heavy media) separation, magnetic and electrostatic concentration, amalgamation, cyanidation, flotation and roasting.

The Extraction Metallurgy Division seeks the development of better hydrometallurgical and pyrometallurgical processes for the treatment of ores and the solution to specific technical problems in this field. A substantial part of its efforts was recently devoted to ores of uranium, iron and other elements and to corrosion problems encountered in certain industrial and governmental projects. The Division accepts samples from operating mines or those under development.

The Mineral Sciences Division applies the principles of chemistry and physics to fundamental and long-term problems in the field of mineral technology and related aspects of metallurgy. It deals with ores, mineral and metal products, inorganic crystalline materials and radioactive substances. Its work ranges from relatively simple routine determinations to complex research problems requiring the most recent techniques and equipment.

The Fuels and Mining Practice Division studies the properties of fossil fuels in Canada to determine the most efficient means of utilizing fuel resources. Most of the work on coal is directed to investigations on the immediate problems of the industry and to engineering studies on the most efficient use of coal in combustion applications with particular reference to thermally generated electric power. Such investigations include work on the evaluation of cleaning performance and the beneficiation of coal fines that are difficult to market, the uses of coal in the metallurgical industries and the study of stress phenomena in mining. Research in petroleum is directed mainly to problems in the refining of heavy crudes and high-sulphur bitumens, and to the chemical evaluation of oils and bituminous substances for classification and genetic purposes.

The Physical Metallurgy Division aids the metal industries through the development of new alloys, new manufacturing techniques and new applications and in activities aimed toward improving present practices in metal fabrication. It also conducts fundamental research on the properties and behaviour of metals. The Division serves the Department of National Defence by extensive research and investigative work, concerned broadly with the development of defence materials and prototype equipment and with the metallurgical problems of that Department. It is also operative in the nuclear metallurgy field.

Dominion Observatories.—The two main units of the Dominion Observatories are the Dominion Observatory at Ottawa, Ont., and the Dominion Astrophysical Observatory at Victoria, B.C. Permanent magnetic observatories are maintained at Ottawa and Agincourt, Ont., Meanook, Alta., Victoria, B.C., and at Resolute Bay and Baker Lake, N.W.T. Seismic stations for recording earthquakes are operated at Victoria, Horseshoe Bay and Alberni, B.C., Banff, Alta., Saskatoon, Sask., Ottawa, Ont., Seven Falls and Shawinigan Falls, Que., Halifax, N.S., and Resolute, N.W.T.

The Dominion Observatory at Ottawa is responsible for the time service of Canada which involves nightly astronomical observations of star positions and radio broadcast services for distributing accurate time to all parts of Canada. Other astronomical activities centred at Ottawa include upper atmospheric studies by means of meteor observations, studies of the sun and its effect on earthly conditions and mathematical studies of the atmospheres of the sun and stars. The geophysical work, also administered from Ottawa, includes the magnetic survey of Canada with emphasis on aids to air and sea navigation, as well as field and observatory work of interest to the geophysical prospector. The methods of seismology are employed to study important aspects of the earth's crust in Canada and to assist in world-wide investigations of the earth's interior. Gravity observations are carried on throughout Canada with a generally similar purpose, special attention being paid to methods of locating mineral deposits.

The Dominion Astrophysical Observatory at Victoria, B.C., is devoted to fundamental research into the physical characteristics of the sun, stars, planets and the material of interstellar space. Its 73-inch reflecting telescope is one of the largest in the world and through its use many important contributions have been made to astronomical knowledge. A new radio telescope at Penticton, B.C., has given the Branch a valuable instrument for research in radio astronomy.

The Geographical Branch.—The function of the Branch is to organize and make available all the geographical data on Canada that might be of use in promoting the country's economic, commercial and social welfare. The work is of two kinds—the compilation of geographical material of national significance, and geographical surveys in the field. Land surface conditions, types of vegetation and the structure of towns and cities are typical subjects of investigation.

Mineral Resources Division.—The Division provides a mineral information service that is freely used by government departments, mining and allied industries and others interested in mining or its significance in the Canadian economy. A mineral resources index inventory is maintained of all known occurrences and of mines, both active and potential. The Division makes economic studies of different phases of the mining industry. It administers the Emergency Gold Mining Assistance Act, prepares reports on request to aid in the administration of such matters as tax exemptions on new mining properties, and prepares reports and briefs on general legislation, taxation and tariff matters connected with the mineral industry. The Division is widely known for its publications, among the most valuable of which are the annual reviews of production, marketing and other matters concerning 64 minerals. It issues more detailed economic studies of metals and fuels of current interest and prepares annual lists of metallurgical works, metal and industrial mineral mines, milling plants, coal mines and petroleum refineries. Also published are special monographs on mining laws, taxation and subjects of particular interest to the mineral industry.

Oceanography.—The decision of the Federal Government to expand oceanography in the Department of Mines and Technical Surveys has led to the institution of a long-range program of research to fill the great need for oceanographic data on the country's coastal waters for defence and resource development purposes. The program also includes studies of the special problems of the deep ocean.

The program comprises two major projects. (1) The establishment, in Bedford Basin near Halifax, of the Bedford Institute of Oceanography. This is a $4,000,000 project which is expected to be fully functional by the spring of 1963. When in operation, it will have a staff of some 300 persons, including oceanographers, hydrographers, submarine geologists and other scientific personnel and will be completely equipped to meet all the requirements of a modern oceanographic institute. In addition, the new Institute will permit the long-overdue expansion of the Atlantic and sub-Arctic sections of the Canadian Hydrographic Service, and will be the headquarters of the scientific staff of the Polar Continental Shelf Project. A multi-million-dollar shipbuilding program has been undertaken to provide the necessary fleet of oceanographic vessels. Two ships are under construction, three are in the design stage, and one will be transferred from the Royal Canadian Navy. The largest of the ships, the $7,000,000 *Hudson*, is under construction and is expected to be commissioned in 1962. (2) The Polar Continental Shelf Project, in which the Department each year sends a scientific expedition into Canada's Far Arctic regions to obtain a detailed knowledge of the waters and floor of the continental shelf in the Arctic

Ocean and of the channels between the northern islands of the Archipelago. The Project's staff includes physicists, hydrographers, geologists, geographers and biologists who, through joint studies, will obtain a more definitive picture of the characteristics of the region.

The Dominion Coal Board.*—The Board was established by the Dominion Coal Board Act (RSC 1952, c. 86) which was proclaimed on Oct. 21, 1947. By this Act the Board was constituted a department of government to advise on all matters relating to the production, importation, distribution and use of coal in Canada. The Board is also charged with the responsibility of advising upon and administering transportation subventions.

Ancillary to these principal duties, the Board is empowered to undertake research and investigations with respect to:—

(1) the systems and methods of mining coal;

(2) the problems and techniques of marketing and distributing coal;

(3) the physical and chemical characteristics of coal produced in Canada with a view to developing new uses therefor;

(4) the position of coal in relation to other forms of fuel or energy available for use in Canada;

(5) the cost of production and distribution of coal and the accounting methods adopted or used by persons dealing in coal;

(6) the co-ordination of the activities of government departments relating to coal; and

(7) such other matters as the Minister may request or as the Board may deem necessary for carrying out any of the provisions or purposes of the Act.

In addition, the Dominion Coal Board Act provides authority in the event of a national fuel emergency to ensure that adequate supplies of fuel are made available to meet Canadian requirements.

Assistance by transportation subventions, which have been maintained in varying degrees during the past 30 years, was designed to further the movement of Canadian coals by equalizing as far as possible the laid-down costs of Canadian coals with imported coals. As these costs and the conditions of the coal industry are subject to variation, the Board must review from time to time the rates of subvention and the areas where the assistance is required. The subventions in respect of the various Canadian coals are authorized by Orders in Council and are paid from moneys voted by Parliament for the purpose from year to year. During the year ended Mar. 31, 1960, a total of 3,090,022 tons was shipped under subvention and $15,491,077 was paid in assistance.

Coal subventions of a new type, based on the Btu content of coal used in thermal electric power production, were authorized in January 1958 by the Atlantic Provinces Power Development Act (SC 1958, c. 25). The Dominion Coal Board was designated as the Federal Government's administrative agency for subvention matters in agreements made with the provinces under this Act.

As agent to the Minister of Mines and Technical Surveys, the Board receives applications and administers loans under the Coal Production Assistance Act (RSC 1952, c. 173, as amended by SC 1958, c. 36, and SC 1959, c. 39). The Board also administers payments under the Canadian Coal Equality Act (RSC 1952, c. 34), which provides a subsidy on Canadian coal used in the manufacture of coke for metallurgical purposes. In the year ended Mar. 31, 1960, payments under this Act totalling $331,332 were made on 669,358 tons of coal.

The Dominion Coal Board has maintained a continuous review of Canada's fuel requirements. In view of the growing impact of oil and natural gas on the markets for Canadian coal, the Board and its staff have intensified the study of the relation of the competing sources of energy and of possible new outlets for the solid fuel.

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* Prepared under the direction of W. E. Uren, O.B.E., Chairman of the Dominion Coal Board.

The Board, since its inception, has worked toward the co-ordination of the activities of various government departments and other bodies relating to coal. On the matter of technical research as related to marketing and distributing coal, the Board has maintained close liaison with the Fuels and Mining Practice Division of the Department of Mines and Technical Surveys. Dominion-provincial conferences on coal research have been held annually since 1949 for the co-ordination and exchange of ideas.

Government purchases of fuel, which constitute an important outlet for coal, have claimed a part of the Board's time. The Interdepartmental Committee on Fuel, set up in the past to co-ordinate and advise on the purchase and supply of fuel to the Armed Services, has remained active. The Dominion Fuel Committee, which was organized in 1956 along similar lines as an advisory body to other government departments, has demonstrated its value.

In a wider sphere, the Chairman of the Board has met annually with the Coal Policy Committee of the Provincial Ministers of Mines and the Board has given consideration to recommendations made by that body relating to coal. The Board has also kept contact with trade and other associations concerned with the various phases of the Canadian coal industry in order to foster better mutual understanding of government and private endeavour. It has generally constituted a central agency through which representations may be made to the Government.

Pursuant to the recommendations of the Royal Commission on Coal (1946), the Board has continued to work for a reduction of customs duties and sales tax on coal mining machinery. It has also maintained its efforts to create a uniform system of coal mine cost accounting which would provide an accurate presentation of the cost of production.

The Dominion Coal Board consists of seven members including the Chairman who is its Chief Executive Officer and has the status of a deputy minister. The Board is responsible to, and subject to the direction of, the Minister of Mines and Technical Surveys.

Subsection 2.—Provincial Government Aid*

Newfoundland.—The Newfoundland Government, through its Mines Branch, provides several valuable services to those interested in prospecting and mining. It supplies certain geological maps of specific areas to interested parties. It identifies specimens sent in from Newfoundland and Labrador and assays by chemical means those that appear to have some mineral content. If good specimens from a known area warrant further investigation, a geologist from the Department of Mines and Resources is available to visit the locality and give advice. Prospecting and mining permits are issued by the Department and claims are registered.

Nova Scotia.—Under the provisions of the Mines Act (RSNS 1954, c. 179), the Government of Nova Scotia may assist a mining company or operator in the sinking of shafts, slopes, deeps and winzes and the driving of adits, tunnels, crosscuts, raises and levels. This assistance may take the form of work performed under contract, the payment of bills for materials and labour, or the guarantee of bank loans. Any such work must be approved by the Department of Mines. The Government is also authorized to assist the mining industry to procure power on the most economical basis and may guarantee the Nova Scotia Power Commission against any loss of revenue incurred on account of capital investments made for that purpose. Mining machinery and equipment that may be used in searching for or testing and mining minerals may be made available through the Government. Such equipment is under the direct supervision of the Chief Mining Engineer.

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* Compiled from material supplied by the respective provincial governments.

The Government of Nova Scotia is also empowered to make any regulations considered necessary for increasing the output of coal. Such regulations cover the appropriation, on payment, of unworked coal lands, the operation of coal mines, and loans or guarantees for loans. Close co-operation is maintained with the Federal Government in carrying out federal regulations made to secure increased production and economical distribution of coal from the mines of the province.

New Brunswick.—There are five divisions under the Mines Branch of the Department of Lands and Mines. The *Mineral Lands Division* administers the disposition of Crown mineral rights including the issuing of prospecting licences, recording of mining claims, issuing of mining licences and leases and other matters pertaining thereto. Detailed and index claim maps are prepared for distribution. The *Mine Inspection and Engineering Division* administers the safety regulations governing operations under the Mining Act. Regular inspections of all mines are performed. Laboratory facilities are maintained. It is the responsibility of this Division to approve equipment used in mines. The *Geological Division* carries on general and detailed geological mapping and investigation. Maps and reports are prepared for distribution. Mineral and rock specimens are examined for prospectors. Preliminary examinations of mineral prospects are performed where requested and circumstances warrant. The *Mine Assessment Division* is responsible for the collection of mining taxes and royalties and the preparation of statistics on mineral production. The *Bathurst Division* serves as recording office for northeastern New Brunswick. In addition, claim maps as well as topographical, geological and aeromagnetic maps are available for perusal and distribution. The staff is prepared to provide information concerning the Mining Act and the use of various types of maps.

Quebec.—The Mining Act (RSQ 1941, c. 196) authorizes the Quebec Department of Mines to build, maintain and improve roads needed for mining development. Such work is done by contract under the supervision of departmental engineers. The Act gives the Department considerable latitude in this respect. Certain major roads have been built to new mining districts and completely paid for; on the other hand, if a particular property requires a branch road from an established highway the owner may be required to contribute a portion of the cost. To prevent the development of uncontrolled settlements in the vicinity of operating mines the Department regulates the use of land and permits the establishment of well organized communities. The municipal organization of such communities is administered by the Department of Municipal Affairs.

The Department maintains well equipped laboratories for the benefit of prospectors, geologists, engineers and mine operators. The facilities include equipment for mineralogy, petrography, ore dressing, and analysis by wet or dry assay, spectrography or X-ray. Qualitative and mineralogical determinations are made free of charge but quantitative analyses are charged for according to a tariff schedule. The Mining Act provides free coupons to be used by prospectors in paying for such analyses.

The province has authorized the establishment of research laboratories and a pilot plant to assist mining and metallurgical enterprises in the processes and techniques of extracting, transforming and utilizing ores.

The Department undertakes geological mapping and inspection. The work is divided between two branches, one responsible for reconnaissance (areal) mapping, and the other for detailed mapping in mining districts and inspection of individual deposits or properties. Field parties are headed by geologists or mining engineers. The published reports on these investigations are distributed free upon request. During the field season about 55 parties are maintained in different sections of the province. Offices, in charge of resident geologists, are maintained in mining districts to collect, preserve and compile geological information disclosed by mining explorations and individual sheets of the compilations are made available to the public.

The Department employs inspectors whose duties are concerned almost exclusively with the safety of workmen in operating mines. Three Mobile Mine Rescue Stations are operated and a mine rescue training program is conducted throughout the province.

In the field of education for prospectors, five-week courses are organized each year at Laval and Montreal Universities. University scholarships are granted each year to deserving undergraduate and postgraduate students in mining, geology and metallurgy, thus contributing to the training of qualified engineers for the benefit of the mining industry. Lectures are given to prospectors at different localities throughout the province.

Ontario.—The Ontario Department of Mines renders a multiplicity of services of direct assistance to the mining industry within the province, as briefly outlined below.

Mining Lands Branch.—This Branch handles all matters dealing with the recording of mining claims, assessment work, etc., and the final issuance of title to mining lands. As a service to the mining public, individual township maps are prepared and kept up to date showing lands open for staking and recorded and patented claims therein. District Mining Recorders maintain offices at strategic locations throughout the province.

Geological Branch.—A continuing program of geological mapping and investigation is carried out by the geological staff of the Department. Detailed reports and geological maps of the areas studied are made available to the public. In many of the active areas of the province resident geologists are engaged to gather and make available to the public information concerning geological conditions, exploration and development within their respective districts. One geologist specializing in industrial minerals is maintained on the staff to examine deposits of this type, to investigate methods of treatment and recovery of such minerals and to compile data on the uses, specifications and markets for such products. Collection and dissemination of information on groundwater resources is also a function of the Geological Branch. During the winter months, courses of instruction for prospectors are held in various centres throughout the province.

Laboratories Branch.—The Provincial Assay Office at Toronto carries out wet analyses and assays of metal and rock constituents on a custom fee basis and gives the same service free of charge to holders of valid assay coupons issued for the performance of assessment work on mining claims. The Timiskaming Testing Laboratories situated at Cobalt, in addition to performing fire assays and chemical analyses, operate a bulk sampling plant mainly to assist the producers of the area in the marketing of the cobalt-silver ores. A Cable Testing Laboratory, wherein all hoisting ropes in use at the mines are periodically tested, is operated under the supervision of the Inspection Branch.

Inspection Branch.—The main function of this Branch is the regular examination of all operating mines, quarries, sand and gravel pits and certain metallurgical works with a view to ensuring proper conditions of health and safety to the men employed. District offices to serve the local areas are maintained in the major mining centres of the province. Mine rescue stations in the principal mining sections are operated under the supervision of the Branch.

Exhibitions.—The Department each year presents displays pertaining to mining within the province at such exhibitions as the Canadian National at Toronto and at other centres from time to time.

Publications Branch.—All maps and reports of the Department are distributed through the agency of the Publications Branch located at the main office of the Department.

Library.—A mining library for the use of the Department and the public is maintained within the Department. This library stocks mainly publications and maps issued by the federal and provincial governments of Canada as well as numerous periodicals and bulletins published in the United States.

Mining and Access Roads.—In 1951 the Department of Mines undertook a program of road construction in the mineralized areas of the province, to open them for prospecting and development and to facilitate the actual operation of mining enterprises. When the importance of this program in its relation to the whole development of northern Ontario became apparent, the Government decided that its scope should be widened and, with that end in view, an interdepartmental committee was set up early in 1955 to decide on matters of policy and to determine the locations and priorities of the proposed roads. The Minister of Mines sits on this committee with the Ministers of Lands and Forests, of Treasury, of Highways and of Reform Institutions.

The Department of Highways supervises the construction of all access roads. Certain roads may be subsidized while others may be financed solely by Department of Mines funds. The sum of $1,500,000 a year has been made available for such projects.

Manitoba.—The Mines Branch of the Manitoba Department of Mines and Natural Resources offers five main services of assistance to the mining industry: maintenance, by the Mining Recorder's offices at Winnipeg and The Pas, of all records essential to the granting and retention of titles to every mineral location in Manitoba; compilation, by the geological staff of the Branch, of historical and current information pertinent to mineral occurrences of interest and expansion of this information by a continuing program of geological mapping; enforcement of mine safety regulations and, by collaboration with industry, introduction of new practices such as those concerned with mine ventilation and the training of mine rescue crews which contribute to the health and welfare of mine workers; and maintenance of a chemical and assay laboratory to assist the prospector and the professional man in the classification of rocks and minerals and the evaluation of mineral occurrences.

Manitoba also aids the mining industry by the construction of access roads to mining districts.

Saskatchewan.—Assistance to the mining industry in Saskatchewan is administered by the Mines Branch, Department of Mineral Resources, with its head office at Regina. The Branch is headed by a Director and comprises three divisions.

The Geology Division is directed by the Chief Geologist and maintains resident geologists in or near the principal mining areas. The Division conducts a prospectors' school which gives basic training in geology, mineralogy, prospecting and exploration techniques and administers the Prospectors' Assistance Plan which assists by lending equipment, paying certain transportation costs, paying for a grub-stake, and by providing technical advice. During the summer months, geological crews survey and map areas and prepare reports which are made available to the public. In 1957 and 1958 magnetometer and electro-magnetic surveys were conducted on approximately 3,000 sq. miles of the Precambrian area.

The Engineering Division administers the Mines Regulation Act, the purpose of which is to ensure safe working conditions in mines. Inspections of mines are carried out by Division officers, a Chief Engineer of Mines stationed at Regina, and an Inspector of Mines stationed at Uranium City. Safety education is also part of the Division's work, taking the form of first aid instruction, mine rescue training, and analysis of accidents.

The Mining Lands Division is responsible for making disposition of all Crown minerals with the exception of petroleum and natural gas, and maintains records respecting areas let out by lease, permit or claim. Recording offices, having the responsibility of assisting the public in determining the lands available and accepting applications, are located at Regina, Prince Albert, La Ronge, Uranium City and Flin Flon.

Alberta.—Alberta Government assistance to the mining industry is diversified in character. The Mines Division of the Department of Mines and Minerals regulates coal mines and quarries and maintains standards of safety by inspection and certification of workers. The Workmen's Compensation Board also maintains safety standards and trains mine rescue crews. The oil and gas industries are served in a similar way by the Oil and Gas Conservation Board. Its regulatory measures, however, are also concerned with preventing the waste of oil and gas resources and with giving each owner of oil and gas rights the opportunity of obtaining a fair share of production. This Board compiles periodic reports and annual records which are of invaluable assistance in oil development in Alberta. The mining industry is also served by the Research Council of Alberta which has made geological surveys of most of the province and has carried forward projects concerned with the uses and development of minerals. The Council has studied the occurrence, uses and analyses of Alberta coals and their particular chemical and physical properties, the use of coals in the generation of power, and the upgrading and cleaning of coal and has also studied briquetting, blending, abrasion loss, shatter and crushing strength, asphalt binders and dust-proofing of coal. Studies have been made of glass sands, salt, fertilizers, cement manufacture and brick and tile manufacture.

The province from time to time has had commissions examine various aspects of the mining industry when it has considered that their findings would be of assistance in developing such industries. The province, together with the Canadian Association of Oil Well Drilling Contractors and the Western Canada Petroleum Association, maintains a detailed supervisory and safety training program concerned with the drilling of oil and gas wells. Of assistance also to mining companies and oil companies are the special deductions provided for in the Alberta Corporation Income Tax Act. These follow the parallel provisions in the federal Income Tax Act.

British Columbia.—The Department of Mines of British Columbia provides the following services: detailed geological mapping as a supplement to the work of the Geological Survey of Canada; free assaying and analytical work for prospectors registered with the Department; assistance to the prospector in the field by departmental engineers and geologists; grub-stakes, limited to a maximum of $700, for prospectors; assistance in the construction of mining roads and trails; and inspection of mines to ensure safe operating conditions.

Section 3.—Mining Legislation

Federal Mining Laws and Regulations.—The Federal Government administers mining laws in the Yukon and Northwest Territories as well as those for Indian reservations. Mining Acts and Regulations applicable to the two Territories are administered by the Resources Division of the Northern Administration Branch, Department of Northern Affairs and National Resources. Minerals underlying federal land under grant are reserved to the Crown, and mining rights may be acquired by staking mineral claims under the appropriate Act or Regulations. Twenty-one-year leases of claims may be issued and these leases are renewable. The disposal of mineral rights underlying an Indian reservation is subject to the consent of the Indians occupying the reserve and to treaties relating thereto.

During 1960, changes in the Northwest Territories Quartz Mining Regulations opened up new areas to development and guaranteed Canadians an effective opportunity to benefit financially in such developments. Formerly, these Regulations applied only to the Northwest Territories; the revised legislation, known as the Canada Mining Regulations, includes provisions for the exploration and development of lands underlying the territorial waters of Canada lying outside any of the provinces and the Yukon Territory. The revision to the Regulations did not modify or change any detail, but two important new clauses concerning Canadian participation in financing and ownership were added to the licence stage: (1) no miner's licence will be granted to an individual unless the Minister of Northern Affairs and National Resources is satisfied that the applicant is a Canadian citizen and will be the beneficial owner of any interest acquired under such licence; (2) under the Regulations, companies are required to incorporate in Canada and to make their shares available to Canadians by listing on a recognized stock exchange, or show that Canadian citizens are the beneficial owners of at least half the issued equity stock in order to qualify for a miner's licence.

At the end of 1960, major revisions to these Regulations were under consideration and several meetings had been held with members of industry to discuss the proposed changes.

Provincial Mining Laws and Regulations.*—All Crown mineral lands lying within the boundaries of the several provinces (with the exception of those within Indian reserves and National Parks which are under the jurisdiction of the Federal Government) are administered by the respective provincial governments.

The granting of land in any province except Ontario and Nova Scotia no longer carries with it mining rights upon or under such land. In Ontario mineral rights are expressly reserved if they are not to be included. In Nova Scotia all minerals belong to the Crown except limestone, gypsum and building materials and, in granting land from the Crown, the right to these minerals goes with the title. In Newfoundland mineral and quarry rights are expressly reserved. Some early grants in British Columbia, Alberta, Saskatchewan, Manitoba, New Brunswick, Quebec and Newfoundland also included certain mineral rights. Otherwise, mining rights must be separately obtained by lease or grant from the provincial authority administering the mining laws and regulations. Mining activities may be classified as placer, general minerals (or veined minerals and bedded minerals), fuels (coal, petroleum and gas) and quarrying. Provincial mining regulations under these divisions are summarized in the following paragraphs.

Placer.—In most provinces in which placer deposits occur there are regulations defining the size of placer holdings, the terms under which they may be acquired and held, and the royalties to be paid.

General Minerals.—These minerals are sometimes described as quartz, lode, or minerals in place. With the exception of British Columbia the most elaborate laws and regulations apply in this division. In all provinces except Alberta a prospector's or miner's licence, valid for one year, must be obtained to search for mineral deposits, the licence being general in some areas but limited in others. A claim of promising ground of a specified size may then be staked. This claim must be recorded within a time limit and payment of recording fees made, except in Quebec where no fees are required. Work to a specified value per annum must be performed upon the claim for a period of up to ten years. There is no time limit in British Columbia but $500 assessment work, of which a survey may represent two-fifths, must be performed and recorded before a lease may be obtained. In Quebec a specified number of man-days of work must be performed and the excess may be carried forward for renewals of licence; before mining can be commenced, a mining concession must be purchased for which it is necessary to produce an engineer's report indicating the presence of an orebody. The taxation applied most frequently is a percentage of net profits of producing mines or royalties. In Newfoundland the provincial mining tax was modified after Confederation on Mar. 31, 1949 to conform with the provincial obligations under the Dominion-Provincial Tax Agreement. No other form of taxation or royalty exists.

Fuels.—In provinces where coal occurs the size of holdings is laid down, together with the conditions of work and rental under which they may be held. In Quebec, ordinary mining claims give rights to all mineral substances and to their development, and stakings for combustible natural gas, salt, coal, mineral oil or naphtha, or iron sands may cover 1,280 acres per claim. Provision is sometimes made for royalties. Acts or regulations govern methods of production. In the search for petroleum and natural gas an exploration permit or reservation is usually required. However, in Manitoba, Saskatchewan, Alberta and British Columbia leases usually follow the exploration reservation whether or not any discovery of oil or gas is made. In Manitoba, Saskatchewan and Alberta, exploration costs are applicable in part on the first year's lease rental. In other provinces, the discovery of oil or gas is usually prerequisite to obtaining a lease or grant of a limited area, subject to carrying out drilling obligations and paying a rental, a fee, or a royalty on production.

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* Compiled from material supplied by the provincial governments.

Quarrying.—Regulations under this heading define the size of holdings and the terms of lease or grant. On Quebec private lands the quarry belongs to the owner; on Crown lands mineral rights belong to the Crown and may be obtained in accordance with the provisions of the law although the rights to exploit peat or marl must be obtained by special licence. In Saskatchewan, sand and gravel belong to the owner of the surface of the land.

Copies of mining legislation including regulations and other details may be obtained from the provincial authorities concerned.

Section 4.—Statistics of Mineral Production

Subsection 1.—Value and Volume of Mineral Production

Statistics of the annual value of mineral production are available from 1886, total production being shown for five-year intervals from that date to 1945 and annually for subsequent years in Table 1. These figures are not strictly comparable throughout the period because of minor changes in methods of computing metallic content of ores sold and valuations of products but they do serve to show broad trends in the mineral industry.

The increase in the value of mineral production since the end of World War II has been phenomenal, having more than tripled since 1948. Production per head of the population advanced from $63.97 in that year to $139.01 in 1960. Although part of this increase was accounted for by advanced prices, the index of the volume of output from Canadian mines recorded an advance from 90.0 (1949 = 100) to 253.3 in the same comparison.

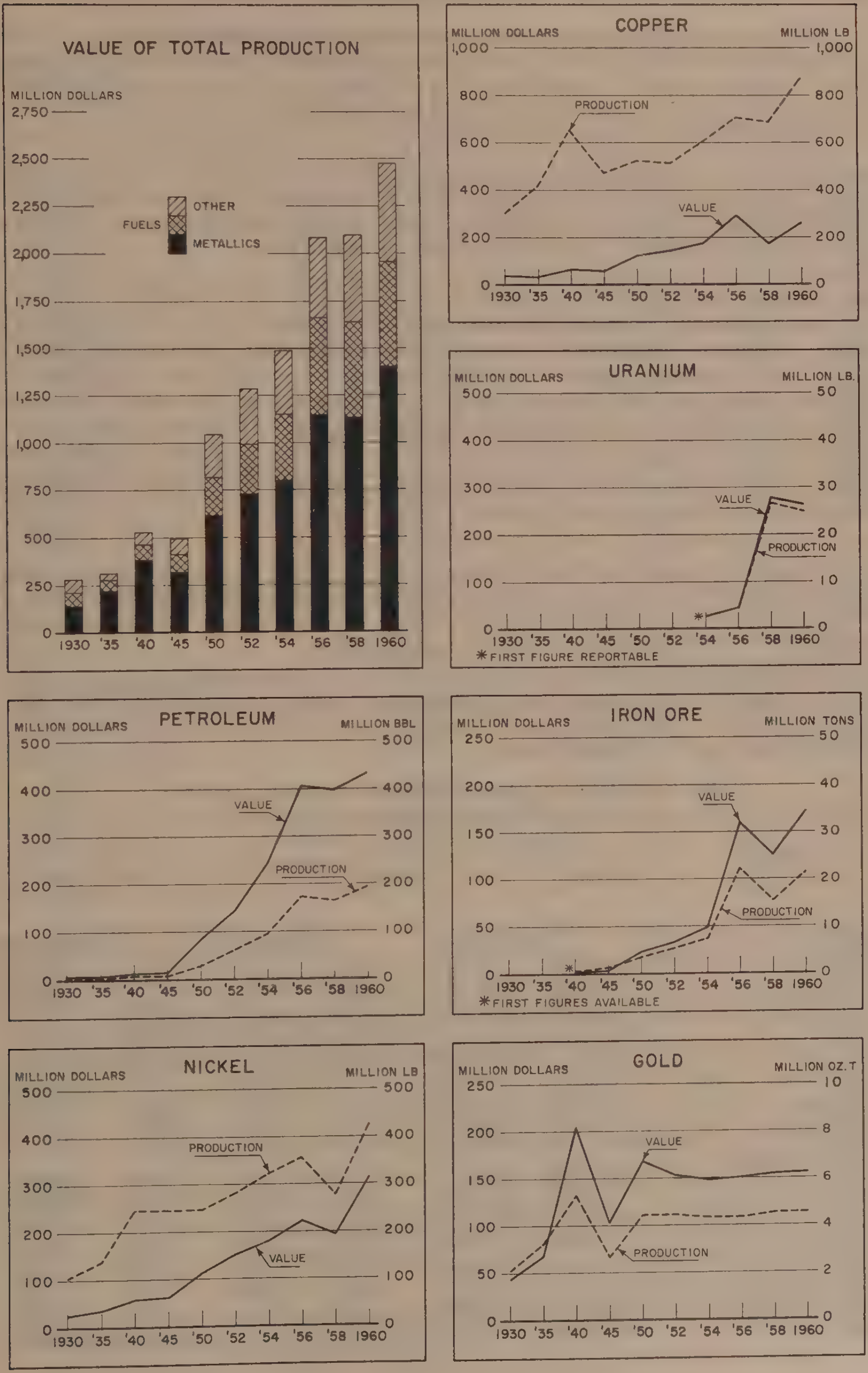
1.—Value of Mineral Production, 1886-1960

Year	Total Value	Value per Capita	Year	Total Value	Value per Capita	Year	Total Value	Value per Capita
	$	$		$	$		$	$
1886	10,221,255	2.23	1935[1]	312,344,457	28.80	1952	1,285,342,353	89.07
1890	16,763,353	3.51	1940	529,825,035	46.55	1953	1,336,303,503	90.40
1895	20,505,917	4.08	1945	498,755,181	41.32	1954	1,488,382,091	96.59
1900	64,420,877	12.15	1946	502,816,251	40.91	1955	1,795,310,796	114.37
1905	69,078,999	11.51	1947	644,869,975	51.38	1956	2,084,905,554	129.35
1910	106,823,623	15.29	1948	820,248,865	63.97	1957	2,190,322,392	132.03
1915	137,109,171	17.18	1949[2]	901,110,026	67.01	1958	2,100,739,038	123.22
1920	227,859,665	26.63	1950	1,045,450,073	76.24	1959	2,409,020,511	138.12
1925	226,583,333	24.38	1951	1,245,483,595	88.33	1960p	2,476,240,506	139.01
1930	279,873,578	27.42						

[1] Beginning with 1935, exchange equalization on gold production is included. [2] Value of Newfoundland production included from 1949.

Current Production.—A detailed review of mineral production during 1959 and 1960 is given at pp. 501-513. As stated there, the value of mineral commodities produced reached a new high in 1960 when it amounted to over $2,476,000,000. This was an increase of 2.8 p.c. over the value of $2,409,000,000 recorded in 1959, the previous peak. The greatest gains over 1959 were: nickel, $55,000,000; copper, $31,000,000; zinc, $11,000,000; asbestos, $11,000,000; and crude petroleum, $10,000,000. Substantial decreases were reported by uranium, $68,000,000, and iron ore, $21,000,000.

QUANTITY AND VALUE OF LEADING MINERALS PRODUCED IN 1960



The value of all metals produced amounted to $1,404,000,000 compared with $1,371,000,000 in 1959. Nickel, with a value of $313,000,000, again became the leading metal, replacing uranium which dropped to third place with a value of $263,000,000. Copper was second with a production valued at $264,000,000 and iron ore fourth with a value of $172,000,000. Iron ore shipments were down by 3,000,000 tons as a result of the below-capacity operation of the steel industry in the United States. The value of the gold output was $156,000,000, almost $6,000,000 higher than in 1959 and the value of the platinum metals, which are by-products of the nickel-copper ores, moved up to $28,000,000 from $17,000,000. An improved market for zinc resulted in higher production with a value of $108,000,000 compared with $97,000,000 in 1959.

The non-metallic group of minerals as a whole continued to increase in value to reach $195,000,000 in 1960, which was more than double the value of these commodities ten years previously. As compared with 1959, the individual products showed varied trends. The major contribution to the advance of $17,000,000 was made by asbestos which, with shipments valued at $119,000,000, reached a new high. The value of titanium dioxide, etc., rose from $8,500,000 to $14,300,000 and the value of elemental sulphur made from sour natural gas from $2,600,000 to $4,700,000. Salt shipments were not greatly changed from the high point of 1959. The export market for barite and gypsum declined, resulting in reduced production of these commodities, although gypsum output had a somewhat higher value. Shipments of lithia were made from stockpiled concentrates and production was low during 1960. Potash production ceased during the year while the mine shaft was being reconstructed.

Mineral or fossil fuels produced during 1960 were valued at $562,000,000 compared with $536,000,000 in 1959. Natural gas and crude petroleum continued their upward trends, output of the latter reflecting the improved export market. Coal output also showed some improvement after declining for several years.

There was less demand for structural materials by the construction industry. Shipments of brick, tile, etc., were down by $2,000,000 during 1960 and cement and lime were each down by $4,000,000. On the other hand, sand and gravel, which was largely used for roads, showed an upward trend.

2.—Quantity and Value of Minerals Produced, 1958-60

Mineral	1958		1959		1960p	
	Quantity	Value	Quantity	Value	Quantity	Value
		$		$		$
Metallics	...	**1,130,160,395**	...	**1,370,648,535**	...	**1,403,987,738**
Antimony lb.	858,633	281,208	1,657,797	540,276	1,522,700	496,400
Bismuth “	412,792	771,267	334,736	590,212	464,440	832,342
Cadmium “	1,756,050	2,669,195	2,160,363	2,765,265	2,244,783	3,187,591
Calcium “	25,227	81,256	67,429	76,409	76,560	88,770
Cobalt “	2,710,429	5,308,298	3,150,027	5,954,916	3,330,914	5,669,560
Copper “	690,227,408	174,430,930	790,538,660	233,102,813	876,766,931	264,336,899
Gold oz. t.	4,571,347	155,334,370	4,483,416	150,508,275	4,602,762	156,171,715
Iron ore ton	15,726,323	126,131,181	24,488,325	192,666,101	21,507,783	171,670,605
Iron, remelt “	...	5,120,620	...	7,187,434	...	10,922,801
Lead lb.	373,360,966	42,413,805	373,391,461	39,616,835	378,533,595	40,427,281
Magnesium “	13,591,705	4,064,825	12,204,448	3,179,515	14,746,427	4,280,232
Molybdenum “	888,264	1,152,838	748,566	940,596	758,507	1,000,265
Nickel “	279,117,422	194,142,019	373,110,226	257,008,801	427,282,898	312,738,234
Palladium, iridium, etc. oz. t.	154,366	4,840,072	177,713	5,916,989	238,489	9,538,921
Platinum “	146,092	9,481,371	150,382	11,015,449	221,832	18,134,766
Selenium lb.	306,990	2,302,426	368,107	2,576,749	562,272	3,487,804
Silver oz. t.	31,163,470	27,053,007	31,923,969	28,022,860	32,328,143	28,726,788
Tellurium lb.	38,250	65,025	13,023	27,999	56,352	197,232
Thorium “	—	—	47,447	105,676	129,894	381,314
Tin “	795,496	625,260	747,443	630,094	515,300	541,065
Titanium ore ton	—	—	26,777	129,565	1,700	12,000
Tungsten (WO_3) lb.	690,976	1,898,455	—	—	—	—
Uranium (U_3O_8) “	26,805,232	279,538,471	31,784,189	331,143,043	25,034,889	262,935,404
Zinc “	850,197,572	92,501,496	792,015,223	96,942,663	811,239,533	108,209,749

2.—Quantity and Value of Minerals Produced, 1958-60—concluded

Mineral		1958		1959		1960p	
		Quantity	Value	Quantity	Value	Quantity	Value
			$		$		$
Non-metallics		...	**150,354,802**	...	**178,216,641**	...	**194,860,357**
Arsenious oxide	lb.	2,323,320	94,542	1,578,307	63,786	1,612,521	77,541
Asbestos	ton	925,331	92,276,748	1,050,429	107,433,344	1,140,538	118,700,998
Barite	"	195,719	2,196,384	238,967	2,254,582	155,506	1,446,621
Diatomite	"	27	540	5	100	5	100
Feldspar	"	20,387	359,966	17,953	301,372	10,789	234,050
Fluorspar		...	1,542,589	...	1,850,497	...	1,958,236
Garnet	"	—	—	—	—	2	180
Grindstone	"	—	—	60	9,000	20	3,000
Gypsum	"	3,964,129	5,189,159	5,878,630	8,393,703	5,161,000	9,308,340
Iron oxide	"	1,632	113,390	1,235	108,286	865	80,000
Lithia	lb.	3,853,322	2,047,880	2,756,280	1,422,153	205,000	75,850
Magnesitic dolomite and brucite		...	2,529,161	...	3,050,779	...	3,301,747
Mica	lb.	1,504,933	89,651	813,834	63,004	1,270,649	88,572
Mineral water	gal.	316,727	172,568	369,113	202,969	368,000	202,000
Nepheline syenite	ton	201,306	2,613,446	228,722	2,930,932	249,200	3,030,300
Peat moss	"	149,013	4,778,860	184,049	6,226,688	182,471	5,850,698
Potash (K_2O)		—	—	...	1,408,462	...	178,700
Pyrite, pyrrhotite	ton	1,191,731	4,248,668	1,099,564	3,433,095	1,004,366	2,828,267
Quartz	"	1,453,656	2,538,150	2,163,546	3,436,730	2,235,795	3,322,824
Salt	"	2,375,192	14,989,542	3,289,976	18,034,522	3,206,164	18,644,203
Silica brick	M	2,815	472,346	1,926	354,295	—	—
Soapstone, talc and pyrophyllite	ton	35,405	429,136	39,176	512,129	41,605	527,416
Sodium sulphate	"	173,217	2,862,915	179,535	2,881,861	211,406	3,419,058
Sulphur in smelter gas	"	241,055	2,361,252	277,030	2,716,416	271,615	2,644,982
Sulphur, elemental	"	94,377	1,872,832	145,656	2,620,787	254,729	4,679,382
Titanium dioxide, etc.		...	6,575,077	...	8,507,149	...	14,257,292
Fuels		...	**510,768,681**	...	**535,577,823**	...	**562,434,863**
Coal	ton	11,687,110	79,963,327	10,626,722	73,875,895	11,226,420	76,059,631
Liquid hydrocarbons		—	—	—	—	...	5,852,422
Natural gas	M cu. ft.	337,803,726	32,057,536	417,334,527	39,609,393	504,452,000	48,027,110
Petroleum, crude	bbl.	165,496,196	398,747,818	184,778,497	422,092,535	192,308,250	432,495,700
Structural Materials		...	**309,455,160**	...	**324,577,512**	...	**314,957,548**
Clay products (brick, tile, etc.)		...	41,709,903	...	42,515,448	...	40,042,494
Cement	ton	6,153,421	96,414,142	6,284,486	95,147,798	5,697,859	91,111,862
Lime	"	1,596,422	19,465,823	1,685,725	21,304,021	1,533,673	17,037,970
Sand and gravel	"	160,210,945	96,282,363	185,123,746	104,651,461	189,961,321	110,086,610
Stone	"	38,156,647	55,582,929	46,439,535	60,958,784	43,404,986	56,678,612
Grand Totals		...	**2,100,739,038**	...	**2,409,020,511**	...	**2,476,240,506**

Analysis of Current Value and Volume.—To assist in clearer and simpler interpretation of the trends in mineral production in Canada over the ten years 1951-60, the percentage of the total value contributed by each principal mineral in each year is given in Table **3**. Values upon which percentages in this table are based are the annual values of mineral production, expressed in Canadian currency, as shown in Tables **1** and **2**.

3.—Percentage of the Total Value Contributed by Principal Minerals, 1951-60

Mineral	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960p
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Metallics[1]	**59.9**	**56.7**	**53.1**	**53.7**	**56.1**	**54.9**	**52.9**	**53.8**	**56.9**	**56.7**
Copper	11.9	11.4	11.3	11.8	13.4	14.1	9.4	8.3	9.7	10.7
Gold	13.0	11.9	10.4	10.0	8.7	7.3	6.8	7.4	6.2	6.3
Iron ore	4.2	4.6	6.2	6.2	6.2	7.6	7.6	6.0	8.0	6.9
Lead	4.7	4.3	3.7	3.9	3.2	2.8	2.3	2.0	1.6	1.6
Nickel	12.1	11.8	12.0	12.1	12.0	10.8	11.8	9.2	10.7	12.6
Platinum metals	1.8	1.4	1.5	1.4	1.3	1.1	1.2	0.7	0.5	0.7
Silver	1.8	1.6	1.8	1.7	1.4	1.2	1.1	1.3	1.2	1.2
Uranium	—	—	—	1.8	1.4	2.2	6.2	13.3	13.7	10.6
Zinc	10.9	10.1	7.2	6.1	6.6	6.1	4.6	4.4	4.0	4.4

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[1] Includes minor items not specified.

3.—Percentage of the Total Value Contributed by Principal Minerals, 1951-60—concluded

Mineral	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960^{p}
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Non-metallics[1]	**9.3**	**9.7**	**9.4**	**8.8**	**8.1**	**8.3**	**7.7**	**7.2**	**7.4**	**7.9**
Asbestos	6.5	6.9	6.4	5.8	5.4	5.3	4.8	4.4	4.5	4.8
Gypsum	0.5	0.5	0.6	0.5	0.4	0.4	0.4	0.3	0.4	0.4
Quartz	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Salt	0.6	0.6	0.5	0.6	0.6	0.7	0.6	0.7	0.7	0.7
Sulphur in smelter gas	0.2	0.3	0.2	0.3	0.3	0.4	0.1	0.2	0.1	0.1
Sulphur, elemental	—	—	—	—	—	—	—	—	0.1	0.2
Fuels	**18.7**	**20.4**	**23.5**	**23.7**	**23.1**	**24.9**	**25.8**	**24.3**	**22.2**	**22.7**
Coal	8.7	8.6	7.7	6.5	5.2	4.6	4.1	3.8	3.1	3.1
Natural gas	0.6	0.7	0.8	0.8	0.9	0.9	1.0	1.5	1.6	1.9
Petroleum	9.4	11.1	15.0	16.4	17.0	19.4	20.7	19.0	17.5	17.5
Structural Materials	**12.1**	**13.1**	**14.0**	**13.8**	**12.7**	**11.9**	**13.6**	**14.7**	**13.5**	**12.7**
Clay products	1.9	1.9	2.2	2.2	2.0	1.8	1.6	2.0	1.8	1.6
Cement	3.2	3.7	4.4	4.0	3.6	3.8	4.3	4.6	4.0	3.7
Lime	1.1	1.1	1.1	1.0	0.9	0.7	0.8	0.9	0.9	0.7
Sand and gravel	3.6	4.0	4.0	4.0	3.8	3.5	4.2	4.6	4.3	4.4
Stone	2.3	2.4	2.3	2.6	2.4	2.1	2.7	2.6	2.5	2.3
Grand Totals	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

[1] Includes minor items not specified.

On the basis of 1949 production levels equalling 100, the total volume of mineral output* had increased by 1960 to 253.3, reflecting substantial advances in the output of natural gas, crude petroleum, iron ore and uranium, with lesser advances in copper, nickel, gold and asbestos. Coal was the only major mineral to register an over-all decline since 1949.

4.—Indexes of the Volume of Production of the Principal Mining Industries, 1951-60

(1949=100)

Mineral	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Metallics	**107.9**	**110.3**	**115.7**	**129.0**	**142.7**	**151.0**	**170.0**	**180.3**	**201.3**	**197.9**
Copper[1]	102.5	98.0	96.1	114.8	123.7	135.2	137.1	131.8	151.6	168.7
Gold[1]	106.6	108.5	98.5	105.8	110.2	107.9	106.7	109.7	108.4	111.2
Nickel[1]	107.1	109.2	111.7	125.3	135.9	139.0	146.8	110.2	144.8	166.9
Iron ore	115.9	126.5	170.6	185.4	316.5	418.6	462.6	321.5	448.9	406.3
Non-metallics	**156.3**	**155.5**	**152.9**	**161.4**	**180.2**	**187.6**	**179.0**	**171.1**	**191.4**	**192.6**
Asbestos	170.7	171.5	162.3	167.8	191.9	188.4	184.3	178.3	193.5	201.4
Fuels	**143.5**	**163.9**	**192.7**	**215.6**	**273.2**	**344.7**	**358.2**	**329.5**	**363.1**	**380.2**
Coal	95.6	90.5	81.5	75.2	74.1	76.6	65.4	56.7	51.9	53.3
Natural gas	120.5	128.9	147.8	169.6	204.5	235.0	295.1	401.6	503.9	589.2
Petroleum	226.9	291.8	385.5	457.8	616.8	812.7	859.5	782.6	873.7	909.9
Total Mining	**123.4**	**131.0**	**142.1**	**158.7**	**185.2**	**212.3**	**227.8**	**227.0**	**251.1**	**253.3**

[1] Based on commodity data.

Subsection 2.—Provincial Distribution of Mineral Production

The 1960 increase in mineral production was general across the country except in Quebec (which was down very slightly as a result of lower production of iron ore, lead, titanium ore and some structural materials) and the Territories. Prince Edward Island's mineral production, which consists entirely of sand and gravel and stone, was also somewhat lower in 1960.

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* For a description of this index, as well as one for manufacturing and electric power and gas utilities, see DBS Reference Paper *Revised Index of Industrial Production, 1935-1957 (1949=100)* (Catalogue No. 61-502).

Ontario again led the provinces in mineral output, producing 39.7 p.c. of the total in 1960 as compared with 40.3 p.c. in 1959 and 37.6 p.c. in 1958. The value rate of increase within the province was 1.4 p.c. in 1960 compared with 22.9 p.c. in the previous year. Higher production of nickel, copper, magnesium, gold and the platinum metals more than offset the major decrease in uranium. Quebec remained in second place, its contribution accounting for 17.8 p.c. of the Canadian total output compared with 18.3 p.c. in 1959 and 17.4 p.c. in 1958. Alberta followed in third place with 15.8 p.c. of the total, a percentage almost unchanged from 1959 and slightly lower than the 16.5 p.c. of 1958. The increase in value of output in the province amounted to 4.1 p.c. contributed mainly by natural gas, crude petroleum and a substantial increase in the production of elemental sulphur. Saskatchewan continued in fourth place, although its contribution to the total declined from 10.0 p.c. in 1958 to 8.7 p.c. in 1959 and 8.6 p.c. in 1960. Value of production for the province was 1.6 p.c. higher than in 1959; increases in crude petroleum and structural materials more than offset a lower uranium output. British Columbia's share of the total at 7.4 p.c. was slightly higher than in 1959, the value of the provincial output increasing by 14.7 p.c. Most of the metals produced in the province recorded higher values but particularly noteworthy increases were made by copper and nickel.

Newfoundland contributed 3.4 p.c. of the total mineral value in 1960, slightly more than in 1959. The provincial total was up by 16.9 p.c., contributed mainly by increased output of iron ore, lead and zinc. Nova Scotia increased its output of coal, gypsum and salt, thus raising its total mineral value by 3.5 p.c. The contribution of that province to the Canadian total was 2.6 p.c. Manitoba, which contributed 2.3 p.c. of the Canadian total, showed a moderate increase over 1959, accounted for mainly by a greater output of zinc. Increased production of structural materials brought New Brunswick's total up by 5.0 p.c.; no metals were produced in that province in 1960. Mineral production in the Territories was slightly lower than in 1959 and their combined contribution to the Canadian total decreased from 1.6 p.c. to 1.4 p.c.

5.—Value of Mineral Production, by Province, 1951-60

NOTE.—Figures from 1899 are given in the corresponding table of previous Year Books beginning with the 1933 edition.

Year	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
	$	$	$	$	$	$	$
1951	32,410,443	—	59,727,256	9,564,617	255,530,071	444,667,203	30,045,992
1952	32,512,313	—	64,552,383	11,298,960	270,483,962	444,669,412	25,105,045
1953	33,780,622	—	67,364,408	11,663,618	251,881,781	465,877,093	25,264,112
1954	42,898,033	—	73,450,898	12,468,322	278,818,070	496,747,571	35,106,922
1955	68,462,956	—	67,133,539	15,759,744	357,010,045	583,954,682	62,018,231
1956	84,349,006	—	66,092,274	18,258,302	422,464,410	650,823,362	67,909,407
1957	82,682,263	—	68,058,743	23,120,689	406,055,757	748,824,322	63,464,285
1958	64,994,754	—	62,706,891	16,275,971	365,706,489	789,601,868	57,217,569
1959	72,156,996	4,559,171	62,879,647	18,133,290	440,897,186	970,762,201	55,512,410
1960p	84,357,384	3,174,908	65,059,439	19,038,175	440,051,465	984,024,964	56,787,574

Year	Saskatchewan	Alberta	British Columbia	Northwest Territories	Yukon Territory	Canada
	$	$	$	$	$	$
1951	51,032,953	168,144,211	176,278,932	8,288,747	9,793,170	1,245,483,595
1952	49,506,094	196,811,654	170,071,244	8,944,835	11,386,451	1,285,342,353
1953	48,081,970	248,863,295	158,487,812	10,300,230	14,738,562	1,336,303,503
1954	68,216,009	279,042,735	158,630,867	26,414,000	16,588,664	1,488,382,091
1955	85,150,128	325,974,326	189,524,574	25,597,821	14,724,750	1,795,310,796
1956	122,744,698	411,171,898	203,277,828	22,157,935	15,656,434	2,084,905,554
1957	173,461,037	410,211,763	178,931,120	21,400,615	14,111,798	2,190,322,392
1958	209,940,966	345,939,248	151,149,136	24,895,390	12,310,756	2,100,739,038
1959	210,042,051	376,215,593	159,395,092	25,874,496	12,592,378	2,409,020,511
1960p	213,387,595	391,711,247	182,834,805	23,633,098	12,179,852	2,476,240,506

6.—Detailed Mineral Production, by Province, 1959 with Preliminary Totals for 1960

Mineral	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and Northwest Territories	CANADA 1959	CANADA 1960P
Metallics.........$	**65,808,402**	—	—	—	**232,546,857**	**806,143,529**	**27,814,453**	**91,393,913**	**6,731**	**109,574,608**	**37,360,042**	**1,370,648,535**	**1,403,987,738**
Antimony......lb.	—	—	—	—	—	—	—	—	—	1,657,797	—	1,657,797	1,522,700
$	—	—	—	—	—	—	—	—	—	540,276	—	540,276	496,400
Bismuth........lb.	—	—	—	—	151,576	31,457	—	—	—	151,703	—	334,736	464,440
$	—	—	—	—	264,228	37,748	—	—	—	288,236	—	590,212	832,342
Cadmium.......lb.	—	—	—	—	—	—	69,095	253,697	—	1,695,821	141,750[1]	2,160,363	2,244,783
$	—	—	—	—	—	—	88,442	324,732	—	2,170,651	181,440[1]	2,765,265	3,187,591
Calcium........lb.	—	—	—	—	—	67,429	—	—	—	—	—	67,429	76,560
$	—	—	—	—	—	76,409	—	—	—	—	—	76,409	88,770
Cobalt..........lb.	—	—	—	—	—	2,835,684	314,343	—	—	—	—	3,150,027	3,330,914
$	—	—	—	—	—	5,414,246	540,670	—	—	—	—	5,954,916	5,669,560
Copper..........lb.	29,978,282	—	—	—	269,823,777	376,544,371	25,890,399	71,072,523	—	16,242,626	986,682[2]	790,538,660	876,766,931
$	8,876,570	—	—	—	79,894,820	110,547,037	7,666,147	21,044,574	—	4,781,508	292,157[2]	233,102,813	264,336,899
Gold.........oz. t.	13,411	—	—	—	999,388	2,683,449	51,186	78,588	200	184,312	472,882[3]	4,483,416	4,602,762
$	450,207	—	—	—	33,549,455	90,083,383	1,718,314	2,638,199	6,714	6,187,354	15,874,649[3]	150,508,275	156,171,715
Iron ore.........ton	6,105,819	—	—	—	11,515,169	6,018,089	—	—	—	849,248	—	24,488,325	21,507,783
$	42,974,837	—	—	—	92,497,012	50,830,404	—	—	—	6,363,848	—	192,666,101	171,670,605
Iron (remelt)... $	—	—	—	—	7,187,434	—	—	—	—	—	—	7,187,434	10,922,801
Lead...........lb.	44,913,551	—	—	—	5,819,148	3,222,447	—	—	—	297,843,859	21,592,456[1]	373,391,461	378,533,595
$	4,765,328	—	—	—	617,412	341,902	—	—	—	31,601,233	2,290,960[1]	39,616,835	40,427,281
Magnesium.....lb.	—	—	—	—	4,059,508	8,144,940	—	—	—	—	—	12,204,448	14,746,427
$	—	—	—	—	977,123	2,202,392	—	—	—	—	—	3,179,515	4,280,232
Molybdenum...lb.	—	—	—	—	748,566	—	—	—	—	—	—	748,566	758,507
$	—	—	—	—	940,596	—	—	—	—	—	—	940,596	1,000,265
Nickel..........lb.	—	—	—	—	—	347,929,183	20,277,741	—	—	1,061,532	3,841,770[2]	373,110,226	427,282,898
$	—	—	—	—	—	240,053,265	13,523,225	—	—	743,072	2,689,239[2]	257,008,801	312,738,234
Palladium, iridium, etc. oz.t.	—	—	—	—	—	177,713	—	—	—	—	—	177,713	238,489
$	—	—	—	—	—	5,916,989	—	—	—	—	—	5,916,989	9,538,921
Platinum......oz. t.	—	—	—	—	—	150,378	—	—	—	4	—	150,382	221,832
$	—	—	—	—	—	11,015,189	—	—	—	260	—	11,015,449	18,134,766
Selenium........lb.	—	—	—	—	194,233	101,400	14,797	57,677	—	—	—	368,107	562,272
$	—	—	—	—	1,359,631	709,800	103,579	403,739	—	—	—	2,576,749	3,487,804
Silver.........oz. t.	1,125,110	—	—	—	4,108,241	10,540,856	373,827	1,187,439	19	7,463,285	7,125,192[4]	31,923,969	32,328,143
$	987,622	—	—	—	3,606,214	9,252,763	328,145	1,042,334	17	6,551,272	6,254,493[4]	28,022,860	28,726,788
Tellurium.......lb.	—	—	—	—	1,662	6,900	909	3,552	—	—	—	13,023	56,352
$	—	—	—	—	3,573	14,835	1,954	7,637	—	—	—	27,999	197,232
Thorium........lb.	—	—	—	—	—	47,447	—	—	—	—	—	47,447	129,894
$	—	—	—	—	—	105,676	—	—	—	—	—	105,676	381,314
Tin............lb.	—	—	—	—	—	—	—	—	—	747,443	—	747,443	515,300
$	—	—	—	—	—	—	—	—	—	630,094	—	630,094	541,065
Titanium ore...ton	—	—	—	—	26,777	—	—	—	—	—	—	26,777	1,700
$	—	—	—	—	129,565	—	—	—	—	—	—	129,565	12,000

Uranium (U$_3$O$_8$).lb.	—	—	—	—	—	25,492,171	—	5,372,685	—	—	919,333[2]	31,784,189	25,034,889
$	—	—	—	—	—	268,529,993	—	54,457,321	—	—	8,155,729[2]	331,143,043	262,935,404
Zinc............lb.	63,348,346	—	—	—	94,115,963	89,963,215	31,405,044	93,753,079	—	406,183,044	13,246,532[1]	792,015,223	811,239,533
$	7,753,838	—	—	—	11,519,794	11,011,498	3,843,977	11,475,377	—	49,716,804	1,621,375[1]	96,942,663	108,209,749
Non-metallics... $	**2,098,795**	—	**10,754,989**	**950,330**	**113,807,933**	**25,245,667**	**1,664,454**	**5,609,807**	**2,933,809**	**15,150,857**	—	**178,216,641**	**194,860,357[5]**
Arsenious oxide..lb.	—	—	—	—	—	1,578,307	—	—	—	—	—	1,578,307	1,612,521
$	—	—	—	—	—	63,786	—	—	—	—	—	63,786	77,541
Asbestos........ton	—	—	—	—	992,196	24,350	—	—	—	33,883	—	1,050,429	1,140,538
$	—	—	—	—	95,226,769	4,327,628	—	—	—	7,878,947	—	107,433,344	118,700,998
Barite..........ton	—	—	215,825	—	—	—	—	—	—	23,142	—	238,967	155,506
$	—	—	2,067,214	—	—	—	—	—	—	187,368	—	2,254,582	1,446,621
Diatomite......ton	—	—	—	—	—	—	—	—	—	5	—	5	5
$	—	—	—	—	—	—	—	—	—	100	—	100	100
Feldspar........ton	—	—	—	—	17,953	—	—	—	—	—	—	17,953	10,789
$	—	—	—	—	301,372	—	—	—	—	—	—	301,372	234,050
Fluorspar....... $	1,749,903	—	—	—	—	100,594	—	—	—	—	—	1,850,497	1,958,236
Grindstone......ton	—	—	—	60	—	—	—	—	—	—	—	60	20
$	—	—	—	9,000	—	—	—	—	—	—	—	9,000	3,000
Gypsum........ton	37,720	—	5,036,411	98,250	—	412,100	200,139	—	—	94,010	—	5,878,630	5,161,000
$	148,617	—	6,462,658	132,735	—	1,017,340	350,323	—	—	282,030	—	8,393,703	9,308,340
Iron oxide......ton	—	—	—	—	1,235	—	—	—	—	—	—	1,235	865
$	—	—	—	—	108,286	—	—	—	—	—	—	108,286	80,000
Lithia..........lb.	—	—	—	—	2,756,280	—	—	—	—	—	—	2,756,280	205,000
$	—	—	—	—	1,422,153	—	—	—	—	—	—	1,422,153	75,850
Magnesitic dolomite and brucite $	—	—	—	—	3,050,779	—	—	—	—	—	—	3,050,779	3,301,747
Mica............lb.	—	—	—	—	778,076	35,758	—	—	—	—	—	813,834	1,270,649
$	—	—	—	—	62,045	959	—	—	—	—	—	63,004	88,572
Mineral water..gal.	—	—	—	—	366,088	3,025	—	—	—	—	—	369,113	368,000
$	—	—	—	—	201,033	1,936	—	—	—	—	—	202,969	202,000
Nepheline ton	—	—	—	—	—	228,722	—	—	—	—	—	228,722	249,200
syenite. $	—	—	—	—	—	2,930,932	—	—	—	—	—	2,930,932	3,030,300
Peat moss......ton	—	—	2,207	25,285	50,578	10,925	16,239	—	—	78,815	—	184,049	182,471
$	—	—	81,460	808,595	1,282,081	295,390	649,539	—	—	3,109,623	—	6,226,688	5,850,698
Potash (K$_2$O)... $	—	—	—	—	—	—	—	1,408,462	—	—	—	1,408,462	178,700
Pyrite, ton	—	—	—	—	...	...	—	—	—	...	—	1,099,564	1,004,366
pyrrhotite. $	—	—	—	—	1,850,523	632,140	—	—	—	950,432	—	3,433,095	2,828,267
Quartz..........ton	—	—	1,151	—	301,706	1,600,352	6,504	188,515	—	65,318	—	2,163,546	2,235,795
$	—	—	6,338	—	1,533,206	1,363,541	38,761	114,994	—	379,890	—	3,436,730	3,322,824
Salt............ton	—	—	120,225	—	—	3,036,230	23,547	48,776	61,198	—	—	3,289,976	3,206,164
$	—	—	1,897,708	—	—	13,228,977	625,831	1,189,675	1,092,331	—	—	18,034,522	18,644,203
Silica brick..... M	—	—	803	—	—	1,123	—	—	—	—	—	1,926	—
$	—	—	239,611	—	—	114,684	—	—	—	—	—	354,295	—
Soapstone and ton	14,443	—	—	—	15,937	8,796	—	—	—	—	—	39,176	41,605
talc.[6] $	200,275	—	—	—	185,951	125,903	—	—	—	—	—	512,129	527,416
Sodium ton	—	—	—	—	—	—	—	179,535	—	—	—	179,535	211,406
sulphate. $	—	—	—	—	—	—	—	2,881,861	—	—	—	2,881,861	3,419,058

For footnotes, see end of table, p. 550.

6.—Detailed Mineral Production, by Province, 1959 with Preliminary Totals for 1960—concluded

Mineral	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and Northwest Territories	Canada	
												1959	1960p
Non-metallics—conc.													
Sulphur in smelter gas. ton	—	—	—	—	...	...	—	—	—	...	—	277,030	271,615
$	—	—	—	—	76,586	964,700	—	—	—	1,675,130	—	2,716,416	2,644,982
Sulphur, elemental. ton	—	—	—	—	—	...	—	...	...	...	—	145,656	254,729
$	—	—	—	—	—	77,157	—	14,815	1,841,478	687,337	—	2,620,787	4,679,382
Titanium dioxide, etc. $	—	—	—	—	8,507,149	—	—	—	—	—	—	8,507,149	14,257,292
Fuels $	—	—	**43,730,600**	**8,555,880**	—	**9,710,784**	**11,619,872**	**104,805,274**	**344,669,705**	**11,378,876**	**1,106,832**	**535,577,823**	**562,434,863**[7]
Coal ton	—	—	4,391,829	1,003,387	—	—	—	1,947,380	2,528,755	751,492	3,879[1]	10,626,722	11,226,420
$	—	—	43,730,600	8,347,215	—	—	—	3,746,044	12,756,112	5,237,724	58,200[1]	73,875,895	76,059,631
Natural gas. Mcf.	—	—	—	117,502	—	16,839,236	—	33,612,966	297,568,926	69,128,708	67,189[2]	417,334,527	504,452,000
$	—	—	—	188,394	—	6,516,784	—	3,327,684	24,995,790	4,558,023	22,718[2]	39,609,393	48,027,110
Petroleum, crude. bbl.	—	—	—	14,479	—	1,001,580	5,056,075	47,442,498	129,967,312	866,234	430,319[2]	184,778,497	192,308,250
$	—	—	—	20,271	—	3,194,000	11,619,872	97,731,546	306,917,803	1,583,129	1,025,914[2]	422,092,535	432,495,700
Structural Materials $	**4,249,799**	**4,559,171**	**8,394,058**	**8,627,080**	**94,542,396**	**129,662,221**	**14,413,631**	**8,233,057**	**28,605,348**	**23,290,751**	—	**324,577,512**	**314,957,548**
Clay products $	68,000	—	1,638,789	743,966	10,374,162	22,174,895	618,550	1,374,834	3,572,920	1,949,332	—	42,515,448	40,042,494
Cement ton	71,253	—	—	170,793	1,975,452	2,386,334	402,562	161,057	689,854	427,181	—	6,284,486	5,697,859
$	1,291,516	—	—	2,606,301	29,520,710	31,731,767	7,314,552	3,954,737	11,678,577	7,049,638	—	95,147,798	91,111,862
Lime ton	—	—	—	18,231	404,060	1,130,055	60,503	—	43,709	29,167	—	1,685,725	1,533,673
$	—	—	—	416,815	4,568,694	14,006,532	1,022,953	—	741,837	547,190	—	21,304,021	17,037,970
Sand and gravel ton	4,825,724	5,244,968	8,032,122	5,093,496	42,449,734	73,981,703	9,261,553	5,898,136	13,271,695	17,064,615	—	185,123,746	189,961,321
$	2,306,864	2,859,171	5,022,575	2,895,642	21,269,248	39,695,602	4,686,315	2,903,486	11,949,099	11,063,459	—	104,651,461	110,086,610
Stone ton	352,231	1,700,000	1,393,668	2,119,136	20,437,243	17,288,796	526,696	—	528,961	2,092,804	—	46,439,535	43,404,986
$	583,419	1,700,000	1,732,694	1,964,356	28,809,582	22,053,425	771,261	—	662,915	2,681,132	—	60,958,784	56,678,612
Grand Totals, 1959 $	**72,156,996**	**4,559,171**	**62,879,647**	**18,133,290**	**440,897,186**	**970,762,201**	**55,512,410**	**210,042,051**	**376,215,593**	**159,395,092**	**38,466,874**	**2,409,020,511**	...
Grand Totals, 1960p $	**84,357,384**	**3,174,908**	**65,059,439**	**19,038,175**	**440,051,465**	**984,024,964**	**56,787,574**	**213,387,595**	**391,711,247**	**182,834,805**	**35,812,950**	...	**2,476,240,506**

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[1] All produced in Yukon Territory. [2] All produced in the Northwest Territories. [3] Yukon production 66,960 oz. t. valued at $2,247,847; remainder N.W.T. [4] Yukon production 7,054,632 oz. t. valued at $6,192,556; remainder N.W.T. [5] Includes 2 tons of garnet valued at $180 produced in Ontario. [6] Includes pyrophyllite. [7] Includes liquid hydrocarbons valued at $5,852,422.

Subsection 3.—Production of Metallic Minerals

The metallic minerals of greatest dollar value in Canada during 1960 were, in order: nickel, copper, uranium, iron ore, gold, zinc, lead and silver. With the exception of uranium, which dropped from first place to third, this order remained unchanged from 1959 and each of these metals except uranium and iron ore advanced considerably in value of production. Developments taking place in metal mining during 1959 and 1960 are described in detail in Section 1, pp. 501–513. The following statistical information gives a comparison of quantity and value figures for each of the principal metals over the ten-year period 1951-60.

Nickel.—The output of nickel reached an all-time high in 1960, in both quantity and value. A steadily upward trend in production experienced since the end of the War was interrupted in 1958 when a rise in world stocks brought about a decrease in nickel prices. However, 1959 output was again close to the level of 1957 and the increases in 1960 amounted to 14.5 p.c. in quantity and 21.7 p.c. in value.

About 93 p.c. of the 1960 quantity shown in Table 7 came from the Sudbury area of Ontario, about 4 p.c. from Lynn Lake in Manitoba and the remainder about equally from Rankin Inlet on Hudson Bay in the Northwest Territories and from Hope, B.C.

Canada uses only about 5,000 tons of refined nickel annually. Exports amounted to 108,350 tons in 1960, mostly to the United States, and exports of nickel in matte, etc., amounted to 87,670 tons.

7.—Quantity and Value of Nickel Produced, 1951-60

Note.—Figures from 1889 are given in the corresponding table of previous Year Books beginning with the 1929 edition.

Year	Quantity	Value	Year	Quantity	Value
	tons	$		tons	$
1951	137,903	151,269,994	1956	178,515	222,204,860
1952	140,559	151,349,438	1957	187,958	258,977,309
1953	143,643	160,430,098	1958	139,559	194,142,019
1954	166,299	180,173,392	1959	186,555	257,008,801
1955	174,928	215,866,007	1960p	213,641	312,738,234

Copper.—Although the quantity of copper produced in Canada reached its peak in 1960, the total value for that year was somewhat lower than that of the smaller quantity produced in 1956. The 10.9-p.c. increase in total tonnage produced in 1960 over 1959 was contributed by Quebec, Ontario and British Columbia.

8.—Copper Production, by Province, and Total Value 1951-60

Note.—Figures from 1886 are given in the corresponding table of previous Year Books beginning with the 1916-17 edition.

Year	New-foundland	Quebec	Ontario	Manitoba	Saskat-chewan	British Columbia	Canada	
							Quantity	Value
	tons	tons	tons	tons	tons	tons	tons	$
1951	2,899	68,866	128,808	15,839	31,625	21,932	269,970[1]	149,026,216[1]
1952	2,959	68,846	125,343	9,374	30,344	20,786	258,038[2]	146,679,040[2]
1953	2,814	54,920	130,582	9,411	30,588	24,148	253,252[3]	150,953,742[3]
1954	3,481	83,930	140,776	12,274	36,192	25,088	302,732[4]	175,712,693[4]
1955	3,052	101,021	146,407	19,379	32,945	22,127	325,994[5]	239,756,455[5]
1956	3,108	122,300	156,271	17,973	33,116	21,682	354,860[6]	292,958,091[6]
1957	4,536	112,409	171,703	18,551	30,597	15,410	359,109[7]	206,897,988[7]
1958	14,751	131,445	142,035	12,601	37,510	6,010	345,114[8]	174,430,930[8]
1959	14,989	134,912	188,272	12,945	35,536	8,121	395,269[9]	233,102,813[9]
1960p	13,875	159,512	204,121	12,307	31,993	15,950	438,383[10]	264,336,899[10]

[1] Includes one ton valued at $536 produced in N.W.T. [2] Includes 383 tons valued at $218,663 produced in Nova Scotia and three tons valued at $1,969 produced in N.W.T. [3] Includes 788 tons valued at $471,962 produced in Nova Scotia. [4] Includes 991 tons valued at $577,868 produced in Nova Scotia. [5] Includes 1,028 tons valued at $757,758 produced in Nova Scotia and 35 tons valued at $26,290 produced in New Brunswick. [6] Includes 404 tons valued at $334,704 produced in Nova Scotia and 6 tons valued at $5,272 produced in New Brunswick. [7] Includes 5,738 tons valued at $3,322,400 produced in New Brunswick and 165 tons valued at $95,672 produced in N.W.T. [8] Includes 328 tons valued at $166,683 produced in New Brunswick and 434 tons valued at $220,748 produced in N.W.T. [9] Includes 494 tons valued at $292,157 produced in N.W.T. [10] Includes 625 tons valued at $378,625 produced in N.W.T.

Uranium.—Uranium mineralization has been found in Canada at intervals along the western and southern edges of the Canadian Shield but production has been concentrated in four areas within this belt—Great Bear Lake in the Northwest Territories, Beaverlodge in northern Saskatchewan, and Elliot Lake and Bancroft in Ontario. Although output of uranium first began in the Northwest Territories in 1942, figures were not available until 1954 because of government restrictions. However, it was after that time that the large mines and mills of Saskatchewan and Ontario came into production. Peak output amounting to 31,800,000 lb. was reached in 1959 from 20 mills, but during 1960, for economic reasons (see p. 506), 10 mills ceased operations and production dropped to 25,000,000 lb. Of the 1960 quantity, 78.9 p.c. was produced in Ontario, 18.4 p.c. in Saskatchewan and the remainder in the Northwest Territories.

9.—Production and Value of Uranium (U_3O_8), by Province, 1954-60

Year	Ontario		Saskatchewan		Northwest Territories		Canada	
	Quantity[1]	Value	Quantity[1]	Value	Quantity[1]	Value	Quantity[1]	Value
	lb.	$	lb.	$	lb.	$	lb.	$
1954	—	—	..	10,981,417	..	15,486,157	..	26,467,574
1955	..	487,054	..	12,312,471	..	13,232,079	..	26,031,604
1956	906,614	9,361,867	2,780,534	27,194,202	873,912	9,176,076	4,561,060	45,732,145
1957	7,970,598	82,940,763	4,462,552	44,561,832	838,264	8,801,769	13,271,414	136,304,364
1958	19,970,136	210,149,700	5,924,253	59,815,924	910,843	9,572,847	26,805,232	279,538,471
1959	25,492,171	268,529,993	5,372,685	54,457,321	919,333	8,155,729	31,784,189	331,143,043
1960p	19,765,553	209,567,628	4,614,156	48,290,131	655,180	5,077,645	25,034,889	262,935,404

[1] Figures for 1956 include radium salts, silver, cobalt and uranium oxides; figures for 1957-60 are for uranium oxide (U_3O_8).

Iron Ore.—Shipments of iron ore from Canadian mines, after a considerable setback in 1958, reached record levels in 1959 and then dropped back in 1960 by 12.2 p.c. in quantity and 10.9 p.c. in value. Increases reported by Newfoundland and British Columbia were more than offset by lower shipments in the two central provinces, particularly Quebec where output was down by 35.3 p.c.

Production of pig iron was at its highest level in 1960 but steel ingots and castings dropped slightly from the high point of 1959. Exports of iron, in the form of ore and concentrates, in 1960 amounted to 18,559,400 tons valued at $151,678,119, compared with 20,778,800 tons valued at $157,814,000 in 1959. Of the 1960 tonnage exported, 61 p.c. went to the United States and most of the remainder to Europe, mainly the United Kingdom. Japan received 1,165,430 tons

10.—Iron Ore Shipments and Production of Pig Iron and Steel Ingots and Castings, 1951-60

Year	Iron Ore Shipments				Canada		Production of Pig Iron	Production of Steel Ingots and Castings
	Nfld.	Que.	Ont.	B.C.	Quantity	Value		
	tons	tons	tons	tons	tons	$	tons	tons
1951	1,724,991	—	2,841,984	113,535	4,680,510	31,141,112	2,552,893	3,568,720
1952	1,653,878	—	2,717,490	900,481	5,271,849	33,744,311	2,681,585	3,703,111
1953	2,686,481	—	2,832,090	991,247	6,509,818	44,102,944	3,012,268	4,116,068
1954	3,758,526	650,415	2,416,911	535,746	7,361,598	49,666,507	2,211,029	3,195,030
1955	7,206,883	4,103,173	4,362,191	610,930	16,283,177	110,435,850	3,215,367	4,534,672
1956	8,463,572	7,956,549	5,558,203	369,954	22,348,278	160,362,118	3,568,203	5,301,202
1957	8,174,779	8,872,948	4,867,105	357,342	22,272,174	167,221,425	3,718,350	5,068,149
1958	5,390,775	6,060,325	3,644,952	630,271	15,726,323	126,131,181	3,059,579	4,359,466
1959	6,105,819	11,515,169	6,018,089	849,248	24,488,325	192,666,101	4,182,775	5,901,487
1960p	7,493,901	7,454,340	5,356,485	1,197,657	21,507,783[1]	171,670,605[1]	4,279,000	5,790,000

[1] Includes 5,400 tons of iron ore valued at $16,200 produced in Alberta.

Gold.—Over the ten-year period 1951-60, Canada's annual gold production has fluctuated narrowly between 4,000,000 oz.t. and 4,600,000 oz.t., and its value between $140,000,000 and $162,000,000. Estimates for 1960 show the highest quantity produced since 1942 and an increase of 2.7 p.c. in quantity and 3.8 p.c. in value over 1959. All producing provinces recorded higher production during the year but Ontario, Quebec and British Columbia accounted for 78.8 p.c. of the total increase. Ontario produced 59.2 p.c. of Canada's gold output in 1960, Quebec 22.4 p.c., the Northwest Territories 8.9 p.c. and British Columbia 4.4 p.c. Canada produced 11 p.c. of the world's output in 1960 and ranked as the second largest producer, following the Union of South Africa.

11.—Quantity and Value of Gold Produced, by Province, 1951-60

NOTE.—Values are calculated at world prices in Canadian funds. Figures from 1862 are given in the corresponding table of previous Year Books beginning with the 1916-17 edition.

Year	Newfoundland		Nova Scotia		Quebec		Ontario	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	oz.t.	$	oz.t.	$	oz.t.	$	oz.t.	$
1951	8,515	313,778	17	626	1,067,306	39,330,226	2,462,979	90,760,77
1952	8,595	294,551	1,433	49,109	1,113,204	38,149,501	2,513,691	86,144,190
1953	7,654	263,451	3,248	111,796	1,021,698	35,166,845	2,182,437	75,119,481
1954	6,528	222,409	3,754	127,899	1,098,570	37,428,280	2,361,385	80,452,387
1955	6,337	218,753	3,880	133,938	1,154,522	39,854,099	2,523,040	87,095,340
1956	8,213	282,938	1,279	44,061	1,036,059	35,692,233	2,513,912	86,604,268
1957	9,755	327,280	45	1,510	1,006,895	33,781,327	2,578,206	86,498,811
1958	13,381	454,686	131	4,451	1,044,846	35,503,867	2,716,514	92,307,146
1959	13,411	450,207	—	—	999,388	33,549,455	2,683,449	90,083,383
1960P	13,479	457,342	3	102	1,033,249	35,058,139	2,725,077	92,461,863

Year	Manitoba		Saskatchewan		Alberta		British Columbia	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	oz.t.	$	oz.t.	$	oz.t.	$	oz.t.	$
1951	163,914	6,040,231	110,216	4,061,460	97	3,574	289,992	10,686,205
1952	141,947	4,864,524	93,585	3,207,158	111	3,804	273,059	9,357,732
1953	131,309	4,519,656	88,327	3,040,215	65	2,237	264,976	9,120,474
1954	134,944	4,597,542	101,785	3,467,815	195	6,644	268,508	9,148,068
1955	123,888	4,276,614	83,580	2,885,182	214	7,387	252,979	8,732,835
1956	120,232	4,141,992	82,687	2,848,567	119	4,100	196,692	6,776,040
1957	120,008	4,026,268	75,236	2,524,168	416	13,957	229,113	7,686,741
1958	87,356	2,968,357	86,590	2,942,328	282	9,582	210,612	7,156,596
1959	51,186	1,718,314	78,588	2,638,199	200	6,714	184,312	6,187,354
1960P	51,352	1,742,373	87,288	2,961,682	230	7,804	202,822	6,881,750

Year	Northwest Territories		Yukon Territory		Canada	
	Quantity	Value	Quantity	Value	Quantity	Value
	oz.t.	$	oz.t.	$	oz.t.	$
1951	212,211	7,819,975	77,504	2,856,022	4,392,751	161,872,873
1952	247,581	8,484,601	78,519	2,690,846	4,471,725	153,246,016
1953	289,929	9,979,356	66,080	2,274,474	4,055,723	139,597,985
1954	308,563	10,512,741	82,208	2,800,826	4,366,440	148,764,611
1955	321,321	11,092,001	72,201	2,492,379	4,541,962	156,788,528
1956	352,669	12,149,447	72,001	2,480,434	4,383,863	151,024,080
1957	340,018	11,407,604	73,962	2,481,425	4,433,894[1]	148,757,143[1]
1958	343,838	11,683,615	67,745	2,301,975	4,571,347[2]	155,334,370[2]
1959	405,922	13,626,802	66,960	2,247,847	4,483,416	150,508,275
1960P	411,492	13,961,924	77,770	2,638,736	4,602,762	156,171,715

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[1] Includes 240 oz.t. of gold valued at $8,052 produced in New Brunswick. [2] Includes 52 oz.t. of gold valued at $1,767 produced in New Brunswick.

Zinc.—The estimated production of zinc (including refined zinc, zinc ores and concentrates) in 1960 showed considerable improvement over the low point of 1959, although it was still well below output for the years 1955-58. British Columbia accounts for half the Canadian production—50.1 p.c. in 1960. Quebec was second in that year with 12.2 p.c., followed in order by Saskatchewan, Ontario, Newfoundland, Manitoba and the Yukon Territory. However, the major contribution to the increased production in 1960 was made by Manitoba.

12.—Quantity and Value of Zinc Produced, 1951-60

NOTE.—Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1939 edition.

Year	Quantity[1]	Value	Average Price per lb.	Year	Quantity[1]	Value	Average Price per lb.
	tons	$	cts.		tons	$	cts.
1951	341,112	135,762,643	19.90	1956	422,642	125,437,344	14.84
1952	371,802	129,833,285	17.46	1957	413,740	100,042,533	12.09
1953	401,762	96,101,386	11.96	1958	425,099	92,501,496	10.88
1954	376,491	90,207,285	11.98	1959	386,008	96,942,663	12.24
1955	433,357	118,306,466	13.65	1960P	405,620	108,209,749	13.34

[1] Estimated foreign smelter recoveries and refined zinc produced in Canada.

Lead.—Lead production in 1960 in the form of refined pig and recoverable lead in ore and concentrates was moderately higher than in 1959. Of the total production, British Columbia accounted for 151,886 tons, or 80.2 p.c. The only lead refinery in Canada is located in that province at Trail. Silver-lead ores are mined at Keno Hill in Yukon Territory and lead also occurs in the complex ores at Buchans in Newfoundland. Small amounts of lead concentrates are produced in Quebec and Ontario.

13.—Quantity and Value of Lead Produced from Canadian Ores, 1951-60

NOTE.—Figures from 1887 are given in the corresponding table of previous Year Books beginning with the 1929 edition.

Year	Quantity	Value	Year	Quantity	Value
	tons	$		tons	$
1951	158,231	58,229,146	1956	188,854	58,582,651
1952	168,842	54,671,021	1957	181,484	50,670,407
1953	193,706	50,076,822	1958	186,680	42,413,805
1954	218,495	58,250,831	1959	186,696	39,616,835
1955	202,762	58,314,500	1960P	189,267	40,427,281

Silver.—Silver production in 1960 reached the record amount of 32,328,143 oz.t. with a peak value of $28,726,788. Most of the increase over 1959 came from British Columbia although production was higher also in Quebec, Manitoba and the Northwest Territories. Production of this metal is fairly widespread across Canada, being recovered mainly as a by-product in the treatment of gold ores and ores of copper, lead, zinc, cobalt and nickel. A large part of Ontario's production of 9,737,480 oz.t. in 1960 originated in the silver-cobalt ores mined at Cobalt, and British Columbia produced 8,705,593 oz.t. from its silver-lead-zinc ores. Yukon Territory is the third largest producer, followed by Quebec. Canada's annual output of silver is exceeded only by that of Mexico and the United States.

14.—Quantity of Silver Produced, by Province, and Total Value, 1951-60

NOTE.—Figures from 1887 are given in the corresponding table of previous Year Books beginning with the 1916-17 edition.

Year	Average Price per oz.t. (Canadian funds)	Newfoundland	Nova Scotia	Quebec	Ontario	Manitoba	Saskatchewan	British Columbia	Northwest Territories	Yukon Territory	Canada[1]	
	cts.	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	$
1951	94.55	534,519	1	4,154,290	4,520,094	613,141	1,454,341	8,342,414	64,228	3,442,788	23,125,825	21,865,467
1952	83.52	638,524	91,886	4,536,247	6,491,124	412,149	1,179,514	7,784,964	59,258	4,028,551	25,222,227	21,065,603
1953	84.01	648,389	226,225	4,571,373	5,154,619	429,508	1,257,622	9,308,874	63,592	6,639,127	28,299,335	23,774,271
1954	83.26	742,120	262,361	4,907,304	5,443,721	411,125	1,474,370	10,825,614	59,037	6,992,279	31,117,949	25,907,870
1955	88.18	701,792	262,067	4,786,695	6,051,017	454,528	1,230,179	8,702,122	58,477	5,712,219	27,984,204	24,676,472
1956	89.67	957,125	92,859	4,063,966	6,626,447	430,124	1,179,110	8,801,398	69,916	6,192,706	28,431,847	25,497,681
1957	87.37	1,196,414	1	3,645,856	6,910,130	407,834	1,145,571	8,584,991	69,104	6,484,185	28,823,298	25,182,915
1958	86.81	1,267,078	4	3,908,361	9,815,257	320,759	1,299,077	8,013,428	72,779	6,415,560	31,163,470	27,053,007
1959	87.78	1,125,110	—	4,108,241	10,540,856	373,827	1,187,439	7,463,285	70,560	7,054,632	31,923,969	28,022,860
1960p	88.91	1,109,600	—	4,311,069	9,737,480	453,613	1,172,274	8,705,593	73,041	6,765,450	32,328,143	28,726,788

[1] Includes relatively small quantities produced in New Brunswick and Alberta; there was no silver produced in New Brunswick in 1959 and 1960.

Metals of the Platinum Group.—Production in 1960 was the second highest on record and 40.3 p.c. greater than in 1959. The whole production comes from the nickel-copper ores at Sudbury, Ont., and the metals are recovered in the form of residues in the electrolytic refinery tanks at Port Colborne, Ont., and at the refinery in Norway to which the Falconbridge Nickel Company Limited ships nickel-copper matte.

15.—Quantity and Value of Platinum and Palladium[1] Produced, 1951-60

NOTE.—Figures from 1921 are given in the corresponding table of previous Year Books beginning with the 1940 edition.

Year	Platinum		Palladium[1]	
	oz. t.	$	oz. t.	$
1951	153,483	14,542,515	164,905	7,950,107
1952	122,317	10,916,792	157,407	7,559,109
1953	137,545	12,550,981	166,018	7,495,409
1954	154,356	12,950,469	189,350	7,956,087
1955	170,494	14,747,732	214,252	8,321,633
1956	151,357	15,725,992	163,451	6,681,098
1957	199,565	17,835,124	216,582	7,896,209
1958	146,092	9,481,371	154,366	4,840,072
1959	150,382	11,015,449	177,713	5,916,989
1960p	221,832	18,134,766	238,489	9,538,921

[1] Includes also iridium, rhodium, ruthenium.

Subsection 4.—Production of Non-metallic Minerals (excluding Fuels)

Asbestos is by far the most important item in this group in point of value, followed by salt, gypsum and sulphur. These four items are discussed separately below; the quantity and value of other non-metallic minerals produced are shown in Table 2, p. 545. See also the review of developments in the industrial mineral field at pp. 522-524.

Asbestos.—In 1960, asbestos mines shipped a record 1,141,000 tons valued at $119,000,000, representing an increase of 8.6 p.c. in quantity and 10.5 p.c. in value over 1959. Quebec, with 12 producing mines, accounted for 94.5 p.c. of the Canadian tonnage; Ontario's one mine produced 22,706 tons and British Columbia's one mine produced 40,238 tons.

16.—Quantity and Value of Asbestos Produced, 1951-60

NOTE.—Figures from 1896 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Quantity	Value	Year	Quantity	Value
	tons	$		tons	$
1951	973,198	81,584,345	1956	1,014,249	99,859,969
1952	929,339	89,254,913	1957	1,046,086	104,489,431
1953	911,226	86,052,895	1958	925,331	92,276,748
1954	924,116	86,409,212	1959	1,050,429	107,433,344
1955	1,063,802	96,191,317	1960p	1,140,538	118,700,998

Salt.—The output of salt in 1960 was slightly below the record amount of 3,289,976 tons produced in 1959, although the value was somewhat higher. The decline was more than accounted for by a 143,000-ton drop in Ontario's output; Ontario produces over 90 p.c. of the total tonnage. Rock salt is mined in Nova Scotia and Ontario only; brine wells are operated in Nova Scotia, Ontario, Manitoba, Saskatchewan and Alberta.

17.—Quantity of Salt Produced, by Province, and Total Value, 1951-60

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Year	Nova Scotia	Ontario	Manitoba	Saskatchewan	Alberta	Canada	
	tons	tons	tons	tons	tons	tons	$
1951	127,252	772,585	16,778	28,192	19,718	964,525	7,905,977
1952	138,845	757,025	18,113	33,540	24,380	971,903	7,774,815
1953	127,819	749,046	18,078	35,100	24,885	954,928	6,974,501
1954	150,589	733,066	17,809	37,227	31,196	969,887	8,340,163
1955	144,862	998,789	18,954	40,748	41,408	1,244,761	10,122,299
1956	132,539	1,347,729	21,068	42,814	46,654	1,590,804	12,144,476
1957	122,763	1,538,805	19,372	43,684	46,935	1,771,559	13,989,703
1958	125,872	2,126,483	20,560	46,511	55,766	2,375,192	14,989,542
1959	120,225	3,036,230	23,547	48,776	61,198	3,289,976	18,034,522
1960p	169,400	2,892,819	21,432	50,000	72,513	3,206,164	18,644,203

Gypsum.—Nova Scotia deposits provided more than 86 p.c. of the total output of gypsum in 1960. The decrease of 11.8 p.c. in the tonnage produced in that province compared with 1959, together with moderate decreases in all other producing provinces except British Columbia, brought the Canadian total down 12 p.c. from the record level of 5,878,630 tons in 1959. Prices, however, were higher and the value of the 1960 production was 10.9 p.c. above that for 1959. In Canada, gypsum is used in the manufacture of plaster and wallboard and is added to Portland cement to control setting, but the greater part of the output is exported in crude form to United States plants for processing.

18.—Quantity of Gypsum Produced, by Province, and Total Value, 1951-60

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1943-44 edition.

Year	Newfoundland	Nova Scotia	New Brunswick	Ontario	Manitoba	British Columbia	Canada	
	tons	tons	tons	tons	tons	tons	tons	$
1951	—	3,190,030	109,469	262,581	134,704	105,908	3,802,692	5,880,853
1952	8,660	2,969,312	110,183	278,992	130,934	92,702	3,590,783	6,538,074
1953	26,531	3,050,832	120,816	334,495	163,313	145,470	3,841,457	7,399,884
1954	26,653	3,168,134	88,856	357,432	162,037	147,310	3,950,422	7,094,671
1955	46,459	3,838,847	90,096	366,416	176,005	150,078	4,667,901	8,037,153
1956	37,000	4,144,147	86,104	366,956	185,986	75,618	4,895,811	7,260,236
1957	29,465	3,842,027	93,249	379,621	183,708	49,422	4,577,492	7,745,105
1958	36,307	3,149,719	105,749	425,733	176,123	70,498	3,964,129	5,189,159
1959	37,720	5,036,411	98,250	412,100	200,139	94,010	5,878,630	8,393,703
1960P	37,000	4,444,500	89,600	350,500	130,000	109,400	5,161,000	9,308,340

Sulphur.—Figures in Table **19** represent the quantity and value of sulphur contained in derivatives from smelter gases such as sulphur dioxide, sulphuric acid, etc., and in pyrite and pyrrhotite shipments, as well as the quantity of sulphur refined from natural gas production. In Canada, sulphur is used in the treatment of sulphite pulps and in the manufacture of rayon, explosives, rubber goods, petroleum refining, matches and insecticides.

19.—Quantity and Value of Sulphur Produced from Smelter Gases and in Pyrite and Pyrrhotite Shipments, and Quantity of Elemental Sulphur Sales, 1951-60

Year	Sulphur in Smelter Gases		Producers' Shipments Pyrite and Pyrrhotite			Sales of Elemental Sulphur[1]
	Quantity	Value	Gross Weight	Sulphur Content	Value	Quantity
	tons	$	tons	tons	$	tons
1951	156,427	1,564,275	444,948	215,363	1,556,510	—
1952	160,547[2]	1,605,470	553,987	263,241[3]	2,245,713	4,225
1953	172,200[2]	1,722,000	408,257	186,650[3]	1,450,698	16,072
1954	221,247[2]	2,212,470	687,928	311,159[3]	2,663,499	18,665
1955	224,457[2]	2,244,570	878,452	403,986[3]	3,740,383	25,976
1956	236,088[3]	2,323,590	1,046,740	473,605	4,538,785	34,784
1957	235,123[3]	2,322,067	1,166,416	515,096	4,808,228	93,338
1958	241,055[3]	2,361,252	1,191,731	512,427	4,248,668	94,377
1959	277,030[3]	2,716,416	1,099,564	..	3,433,095	145,656
1960P	271,615[3]	2,644,982	1,004,366	..	2,828,267	254,729

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[1] Recovered from sour natural gas and nickel sulphide ores. [2] Does not include sulphur in acid made from roasting zinc sulphide concentrates at Arvida. [3] Includes sulphur in acid made from roasting zinc sulphide concentrates at Arvida.

Subsection 5.—Production of Fuels

Coal.—The downward trend in the production of coal, in evidence for some time, was interrupted in 1960 when tonnage mined increased by 5.6 p.c. and value by 3.0 p.c. over 1959. All producing provinces with the exception of Alberta showed some increase in output. Imports continued to decline but exports, mostly of bituminous coal, recorded a considerable increase in 1960.

20.—Coal Production, by Province, 1951-60

NOTE.—Figures from 1874 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Nova Scotia	New Brunswick	Saskatchewan	Alberta	British Columbia	Yukon Territory	Canada	
	tons	tons	tons	tons	tons	tons	tons	$
1951	6,307,629	653,439	2,223,318	7,659,329	1,739,412	3,696	18,586,823	109,038,855
1952	5,905,265	742,823	2,083,465	7,194,757	1,644,250	8,442	17,579,002	111,026,149
1953	5,787,026	721,252	2,021,304	5,917,474	1,443,006	10,611	15,900,673	102,721,875
1954	5,842,896	781,271	2,116,740	4,859,049	1,299,510	14,113	14,913,579	96,600,266
1955	5,731,026	877,838	2,293,816	4,455,279	1,453,881	7,040	14,818,880	93,579,471
1956	5,775,025	988,266	2,341,641	4,328,787	1,472,519	9,372	14,915,610	95,349,763
1957	5,685,770	976,597	2,248,812	3,156,546	1,113,699	7,731	13,189,155	90,220,670
1958	5,269,879	790,719	2,253,176	2,519,901	849,091	4,344	11,687,110	79,963,327
1959	4,391,829	1,003,387	1,947,380	2,528,755	751,492	3,879	10,626,722	73,875,895
1960[p]	4,668,917	1,030,319	2,202,827	2,480,707	838,705	4,945	11,226,420	76,059,631

21.—Imports of Anthracite, Bituminous and Lignite Coal, 1951-60

NOTE.—Figures from 1868 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Anthracite[1]		Bituminous[2]		Lignite		Totals[3]	
	tons	$	tons	$	tons	$	tons	$
1951	3,853,431	51,244,639	22,938,824	116,802,323	9,150	42,486	26,801,405	168,089,448
1952	3,894,863	49,430,308	21,030,503	101,203,443	7,487	33,403	24,932,853	150,667,154
1953	2,989,054	40,088,265	20,273,425	96,464,453	3,062	14,735	23,265,541	136,567,453
1954	2,754,882	33,163,183	15,822,283	71,617,515	2,824	14,500	18,579,989	104,795,198
1955	2,646,503	30,190,088	17,094,480	76,352,171	1,548	8,663	19,742,531	106,550,922
1956	2,545,627	30,060,480	20,065,807	98,666,368	1,940	9,822	22,613,374	128,736,670
1957	1,925,498	24,605,035	17,548,585	93,027,907	2,166	11,087	19,476,249	117,644,029
1958	1,556,018	19,130,513	12,934,262	68,880,374	1,035	5,095	14,491,315	88,015,982
1959	1,603,909	17,934,649	12,632,209	66,553,040	—	—	14,236,118	84,487,689
1960[p]	1,297,467	13,577,411	12,267,369	63,383,462	—	—	13,564,836	76,960,873

[1] Includes anthracite dust. [2] Includes coal ex-warehoused for ships' stores. [3] Canada also imported 170,157 tons of briquettes of coal or coke valued at $2,061,798 in 1951; 155,597 tons valued at $1,868,619 in 1952; 128,673 tons valued at $1,601,376 in 1953; 128,163 tons valued at $1,583,610 in 1954; 124,216 tons valued at $1,536,347 in 1955; 126,724 tons valued at $1,581,699 in 1956; 73,306 tons valued at $937,679 in 1957; 41,820 tons valued at $536,344 in 1958; 24,521 tons valued at $321,149 in 1959; and 15,528 tons valued at $213,239 in 1960.

22.—Exports of Domestic Coal, 1951-60

NOTE.—Figures from 1868 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Quantity	Value	Year	Quantity	Value
	tons	$		tons	$
1951	435,083	3,495,664	1956	594,166	4,710,030
1952	388,960	3,203,522	1957	396,311	3,357,959
1953	255,274	1,999,908	1958	338,544	2,907,513
1954	219,346	1,716,435	1959	473,768	3,582,313
1955	592,782	4,870,598	1960[p]	852,921	6,789,163

The amounts and percentages of domestic and imported coal apparently consumed in Canada in the years 1951-60 are shown in Table 23. The imports represent amounts taken out of bond for consumption during the respective years, regardless of when received. Thus the totals are exclusive of coal landed at Canadian ports and re-exported or ex-warehoused for ships' stores without being taken out of bond. However, since such coal while remaining in bond at the port is available for Canadian consumption if required, the total amount of coal made available for consumption in Canada in 1960 amounted to 22,427,944 tons, including 1,199,809 tons of anthracite, 17,516,780 tons of bituminous, 1,540,566 tons of subbituminous, and 2,170,789 tons of lignite.

23.—Consumption of Canadian and Imported Coal in Canada, 1951-60

NOTE.—Figures from 1886 are given in the corresponding table of previous Year Books beginning with the 1921 edition.

Year	Canadian Coal[1]		Imported Coal 'Entered for Consumption'				Grand Total	Consumption per Capita[3]
			From United States	From United Kingdom	Total[2]			
	tons	p.c.	tons	tons	tons	p.c.	tons	tons
1951	17,571,154	39.8	26,232,211	291,656	26,523,921	60.2	44,095,075	2.92
1952	16,749,416	40.5	24,248,804	356,032	24,603,789	59.5	41,353,205	2.87
1953	15,240,105	40.0	22,548,793	352,383	22,900,392	60.0	38,140,497	2.58
1954	14,466,212	44.0	18,054,962	266,304	18,322,056	56.0	32,788,268	2.16
1955	14,060,039	42.1	19,053,434	269,898	19,322,134	57.9	33,382,173	2.14
1956	14,115,095	38.9	22,045,485	153,404	22,198,049	61.1	36,313,144	2.26
1957	12,478,626	39.6	18,902,822	134,671	19,037,493	60.4	31,516,119	1.90
1958	11,054,757	43.9	14,089,557	65,275	14,154,121	56.1	25,208,878	1.48
1959	10,589,263	43.1	13,861,676	96,814	13,958,996	56.9	24,548,259	1.41
1960	9,973,308	42.9	13,211,493	65,375	13,276,599	57.1	23,249,907	13.1

[1] The sum of Canadian coal mines' sales, colliery consumption, coal supplied to employees and coal used in making coke, etc., less the tonnage of coal exported. [2] Includes small tonnages from countries other than the United Kingdom and the United States. Deductions have been made from this column to take account of foreign coal re-exported from Canada and bituminous coal ex-warehoused for ships' stores. [3] Figures based on estimates of population given at p. 165.

Petroleum.—The upward climb of crude petroleum production in evidence since the discovery of the Leduc field in Alberta in 1947 halted temporarily in 1958 but resumed in 1959 and continued in 1960. Production in the latter year reached a record level, 4.1 p.c. above the previous peak in 1959; the 1960 value, however, was still somewhat below that of the 1957 output. The increase in 1960 over 1959 was mainly accounted for by a more than 5,000,000-bbl. increase in Saskatchewan and a more than 2,000,000-bbl. increase in Alberta.

24.—Quantity and Value of Crude Petroleum Produced, by Province, 1951-60

NOTE.—Figures from 1936 are given in the corresponding table of previous Year Books beginning with the 1948-49 edition.

Year	New Brunswick	Ontario	Manitoba	Saskatchewan	Alberta	Northwest Territories	Canada
	QUANTITY						
	bbl.	bbl.	bbl.	bbl.	bbl.	bbl.	bbl.
1951	15,551	197,171	10,698	1,249,281	45,915,384	227,449	47,615,534
1952	14,237	191,814	104,826	1,696,505	58,915,723	314,217	61,237,322
1953	14,738	299,685	653,514	2,797,888	76,816,383	316,689	80,898,897
1954	13,046	412,474	2,148,184	5,422,899	87,713,855	369,887	96,080,345
1955	12,548	525,510	4,145,756	11,317,168	113,035,046	404,219	129,440,247
1956	16,628	593,370	5,786,540	21,077,371	143,909,641	449,409	171,981,413[1]
1957	19,401	623,666	6,089,743	36,861,089	137,492,316	420,844	181,848,004[2]
1958	15,189	778,341	5,829,226	44,626,148	113,277,847	457,086	165,496,196[3]
1959	14,479	1,001,580	5,056.075	47,442,498	129,967,312	430,319	184,778,497[4]
1960P	14,250	1,005,000	4,718,000	53,000,000	132,100,000	521,000	192,308,250[5]

24.—Quantity and Value of Crude Petroleum Produced, by Province, 1951-60—concluded

Year	New Brunswick	Ontario	Manitoba	Saskatchewan	Alberta	Northwest Territories	Canada
	VALUE						
	$	$	$	$	$	$	$
1951.....	21,771	677,905	26,478	1,659,045	113,870,152	399,887	116,655,238
1952.....	19,932	641,037	229,299	2,256,352	139,512,432	379,160	143,038,212
1953.....	20,633	994,835	1,714,806	3,833,107	193,761,644	257,251	200,582,276
1954.....	18,265	1,391,687	5,619,649	8,183,304	228,319,165	344,960	243,877,030
1955.....	17,567	1,599,335	9,618,154	18,317,968	274,901,232	1,185,780	305,640,036
1956.....	23,279	1,958,121	13,633,088	36,253,078	353,629,158	762,773	406,561,872[1]
1957.....	27,161	2,160,000	15,467,947	79,325,064	355,555,140	294,591	453,593,620[2]
1958.....	21,265	2,623,000	14,415,676	96,704,863	283,262,592	698,266	398,747,818[3]
1959.....	20,271	3,194,000	11,619,872	97,731,546	306,917,803	1,025,914	422,092,535[4]
1960P....	19,950	2,763,750	10,615,000	106,000,000	310,435,000	932,000	432,495,700[5]

[1] Includes 148,454 bbl. valued at $302,375 produced in British Columbia. [2] Includes 340,945 bbl. valued at $763,717 produced in British Columbia. [3] Includes 512,359 bbl. valued at $1,022,156 produced in British Columbia. [4] Includes 866,234 bbl. valued at $1,583,129 produced in British Columbia. [5] Includes 950,000 bbl. valued at $1,730,000 produced in British Columbia.

Natural Gas.—The output of natural gas continued to increase at a rapid rate in Alberta and British Columbia. Total Canadian shipments, which amounted to 150,772,000 Mcf. in 1955 reached a high of 504,452,000 Mcf. in 1960, 370,000,000 Mcf. of which came from Alberta. A review of developments in the natural gas industry is given at pp. 524-528.

25.—Quantities of Natural Gas Produced, by Province, and Total Value, 1951-60

NOTE.—Figures from 1920 are given in the corresponding table of previous Year Books beginning with the 1940 edition.

Year	New Brunswick	Ontario	Saskatchewan	Alberta	British Columbia	Northwest Territories	Canada	
	Mcf.	Mcf.	Mcf.	Mcf.	Mcf.	Mcf.	Mcf.	$
1951.....	261,579	8,442,842	860,082	69,876,831	—	19,333	79,460,667	7,158,920
1952.....	202,042	8,302,190	1,007,491	79,149,895	—	24,847	88,686,465	9,517,638
1953.....	177,112	9,708,969	1,422,128	89,651,605	—	26,109	100,985,923	10,877,017
1954.....	183,457	10,015,818	3,333,077	107,173,777	—	29,085	120,735,214	12,482,109
1955.....	186,549	10,852,857	6,706,743	133,007,493	—	18,670	150,772,312	15,098,508
1956.....	190,322	12,811,618	9,807,697	146,133,893	187,846	21,210	169,152,586	16,849,556
1957.....	176,417	14,400,913	13,994,347	183,140,820	8,274,942	19,243	220,006,682	20,962,501
1958.....	123,957	16,147,986	18,819,795	239,049,591	63,638,297	24,100	337,803,726	32,057,536
1959.....	117,502	16,839,236	33,612,966	297,568,926	69,128,708	67,189	417,334,527	39,609,393
1960P....	90,000	16,250,000	33,000,000	370,000,000	85,067,000	45,000	504,452,000	48,027,110

Subsection 6.—Production of Structural Materials

Active construction throughout Canada has kept production of structural materials at a high level in recent years. However, the trend turned slightly downward in 1960 when the total value of these materials declined by 3 p.c. compared with 1959. For Canada as a whole, only the output of sand and gravel was higher than in 1959. In point of value, this is the most important of the structural materials, followed by cement, stone, clay products and lime. Developments in certain structural materials industries during 1959-60 are covered in the review at pp. 522-523.

Sand and Gravel.—Deposits of sand and gravel are numerous throughout Eastern Canada, with the exception of Prince Edward Island where gravels are scarce. The local needs for these materials are usually supplied from the nearest deposits as their cost to the consumer is governed largely by the length of haul. This accounts for the large number of small pits and the small number of large plants in operation. Every province except New Brunswick and Prince Edward Island produces natural bonded sand but some grades particularly suitable for certain industries command much higher prices than ordinary sand. The greater part of the sand and gravel output is used in road improvement, concrete works or as railway ballast and most of the commercial plants are equipped for producing crushed gravel, a product that can compete with crushed stone.

26.—Quantity and Value of Sand, and Sand and Gravel Produced, 1957-59

Material and Purpose	1957		1958		1959	
	Quantity	Gross Value	Quantity	Gross Value	Quantity	Gross Value
	tons	$	tons	$	tons	$
Sand—						
Moulding sand	17,618	60,284	21,346	98,179	[1]	[1]
For building, concrete, roads, etc.	14,173,048	9,673,088	13,232,445	11,902,625	15,556,197	13,325,181
Other	435,488	388,213	313,391	171,691	177,977	107,073
Sand and Gravel—						
For railway ballast	7,687,770	3,057,655	8,373,117	3,624,978	8,303,445	2,836,993
For concrete, roads, etc.	108,654,941	56,593,792	106,229,805	55,362,687	128,056,334	61,874,585
For mine filling	3,374,630	880,085	4,233,347	2,042,032	2,611,603	798,510
Crushed gravel	25,486,017	21,286,237	27,807,494	23,080,171	30,418,190	25,709,119
Totals, Sand and Gravel	**159,829,512**	**91,939,354**	**160,210,945**	**96,282,363**	**185,123,746**	**104,651,461**

[1] Included under feldspar and quartz in 1959.

In 1960 an estimated 189,961,321 tons of sand and gravel were produced, valued at $110,086,610. This represented an increase of 2.6 p.c. in quantity and 5.2 p.c. in value over 1959. Quebec and Ontario together contributed 64.9 p.c. of the quantity. The breakdown of these totals by purpose was not available at the time of going to press.

Cement.—The production of cement in Canada reached its peak in 1959, decreasing 9.3 p.c. in 1960. Consumption was down in 1960 by 7.8 p.c., interrupting the steadily upward trend in evidence throughout the postwar period. Of the Canadian total of 5,697,859 tons produced in 1960, Ontario contributed 34.2 p.c. and Quebec 32.2 p.c. and all other provinces except Prince Edward Island and Nova Scotia contributed varying amounts; the output decreases in 1960 all took place in Ontario, Quebec, British Columbia, Alberta and New Brunswick.

27.—Quantity and Value of Production, Imports, Exports and Apparent Consumption of Cement, 1951-60

Note.—Figures from 1910 are given in the corresponding table of previous Year Books beginning with the 1939 edition.

Year	Shipments (sold or used)		Imports	Exports	Apparent Consumption[1]
	tons	$	tons	tons	tons
1951	2,976,367	40,446,288	407,300	453	3,383,214
1952	3,241,095	48,059,470	509,947	754	3,750,288
1953	3,891,708	58,842,022	434,487	2,577	4,323,618
1954	3,926,559	59,035,644	401,135	21,638	4,306,056
1955	4,404,480	65,650,025	517,890	168,907	4,753,463
1956	5,021,683	75,233,021	677,616[2]	124,561	5,574,738
1957	6,049,098	93,167,477	92,380	338,315	5,803,163
1958	6,153,421	96,414,142	41,555	141,250	6,053,726
1959	6,284,486	95,147,798	29,256	303,126	6,010,616
1960p	5,697,859	91,111,862	22,478	181,117	5,539,220

[1] Shipments plus imports less exports.

[2] Includes imported clinker, other than white.

Stone.—The stone industry has two main divisions—stone quarrying and the stone products industry. The granite, limestone, marble, sandstone and slate quarries of Canada yield high-grade structural and decorative materials and also supply requirements for chemical and other allied industries. The gross value of stone of all varieties produced in Canada in 1960 was estimated at $56,678,612 as compared with $60,958,784 in 1959 and $55,582,929 in 1958. Details for 1960 were not available at time of going to press.

28.—Quantity and Value of Stone Produced, 1957-59

Type	1957		1958		1959	
	Quantity	Gross Value	Quantity	Gross Value	Quantity	Gross Value
	tons	$	tons	$	tons	$
Building	129,865	5,737,049	145,229	6,114,234	144,199	5,338,418
Monumental and ornamental	17,045	1,241,504	16,147	1,224,532	15,881	1,086,407
Stone for agriculture	610,398	1,471,841	696,437	1,790,169	727,142	1,966,332
Chemical Uses—						
Flux	1,584,059	1,788,177	1,116,163	1,337,133	1,394,849	1,682,897
Pulp and paper	395,725	1,214,710	340,750	1,093,517	375,823	1,169,780
Other	285,219	411,913	416,820	381,341	445,397	414,656
Rubble and riprap	3,958,004	5,831,052	2,479,319	2,597,157	1,853,803	2,128,901
Crushed	33,010,716	39,665,985	32,200,191	38,829,823	40,480,688	44,636,226
Totals[1]	**40,282,081**	**59,197,662**	**38,156,647**	**55,582,929**	**46,439,535**	**60,958,784**

[1] Includes minor items not specified.

Clay Products.—The sales value of clay products produced in 1960 was 5.8 p.c. lower than the peak production of 1959. Common clays suitable for the production of building bricks and tile are found in all the provinces; production is greatest in Ontario and Quebec. Stoneware clays are produced largely from the Eastend and Willows areas in Saskatchewan and shipped to Medicine Hat, Alta., where, utilizing the cheap gas fuel, they are manufactured into stoneware, sewer pipe, pottery, tableware, etc. Stoneware clay also occurs in Nova Scotia and, although it has not been developed extensively for ceramic use, some is used for pottery. Two large plants and a few small plants manufacture fireclay refractories from domestic clay in British Columbia, Saskatchewan and Nova Scotia. Deposits of high-grade, plastic, white burning clays occur in northern Ontario and deposits yielding high-grade china clay have been found along the Fraser River in British Columbia but these have not been used on a commercial scale, nor have the ball clays of high bond strength occurring in the white mud beds of southern Saskatchewan been developed to any extent.

29.—Value (Total Sales) of Clay Products Produced, by Province, 1951-60

Note.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Year	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario
	$	$	$	$	$
1951	32,183	1,202,428	740,861	6,776,430	10,484,341
1952	29,285	1,221,893	655,084	6,645,387	11,975,200
1953	39,500	1,234,319	620,769	8,070,942	14,829,222
1954	33,042	1,082,039	587,994	8,055,692	17,230,231
1955	49,338	1,196,968	704,025	8,451,362	18,314,320
1956	47,145	1,196,868	975,855	9,415,703	19,173,336
1957	29,500	1,345,361	803,169	8,898,855	18,353,299
1958	58,282	1,509,536	629,921	10,675,463	22,786,291
1959	68,000	1,638,789	743,966	10,374,162	22,174,895
1960^{p}	73,000	1,685,428	716,092	8,956,826	21,361,550

29.—Value (Total Sales) of Clay Products Produced, by Province, 1951-60—concluded

Year	Manitoba	Saskat-chewan	Alberta	British Columbia	Canada
	$	$	$	$	$
1951	673,698	616,655	1,787,731	1,213,329	23,527,656
1952	575,088	711,778	1,964,618	1,183,195	24,961,528
1953	568,477	742,959	2,135,085	1,536,458	29,777,731
1954	512,989	844,398	2,316,982	1,696,731	32,360,098
1955	635,554	992,307	2,800,481	2,115,415	35,259,770
1956	754,503	1,054,071	3,038,544	2,128,955	37,784,980
1957	827,697	1,015,389	2,628,187	2,020,701	35,922,158
1958	682,943	1,158,803	2,569,170	1,639,494	41,709,903
1959	618,550	1,374,834	3,572,920	1,949,332	42,515,448
1960p	806,200	887,488	3,584,954	1,970,956	40,042,494

Section 5.—Industrial Statistics of the Mineral Industry

The scope of the annual statistics on mineral production published by the Dominion Bureau of Statistics includes a general review of the principal mineral industries such as the copper-gold, silver-lead-zinc, and nickel-copper industries as well as a section on metallurgical works. Additional data published at irregular intervals include such features as numbers of employees, salaries and wages paid and net value of shipments.

The figures for 'net value of shipments' of industries given in Tables **30** and **31** are, in each table, the settlements received for shipments by producers and the additional values obtained when the smelting of ores is completed in Canada, less the cost of materials, fuel, etc. The totals indicate more nearly the actual returns to the different industries than do the values for the minerals in Table **2**, pp. 544-545 where, with respect to copper, lead, zinc and silver, values are computed by applying the average prices for the year in the principal metal markets to the total production from mines and smelters with no reduction for fuel, electricity and other supplies consumed in the production process.

Some imported ores and concentrates are treated in Canadian non-ferrous smelting and refining works, especially in the production of aluminum, where imported ore only is used, and of cobalt which is derived mainly from African ores. The net shipments of these plants include, therefore, the net value of the metals recovered from these imported ores and to this extent the net shipments shown in Tables **30** and **31** include products of other than Canadian origin.

30.—Summary Statistics of the Mineral Industry, by Province, 1959

Province or Territory	Plants or Mines	Em-ployees	Salaries and Wages	Purchased Fuel, Electricity and Process Supplies[1]	Net Value of Shipments[2]
	No.	No.	$	$	$
Newfoundland	389	4,001	15,847,209	22,320,518	47,284,499
Prince Edward Island	67	72	155,525	42,950	4,516,221
Nova Scotia	661	9,129	28,979,644	12,378,735	51,132,974
New Brunswick	245	1,733	5,164,218	4,178,800	14,309,750
Quebec	4,694	36,954	162,161,262	523,052,380	437,407,511
Ontario	6,524	57,253	270,896,058	524,847,781	762,156,665
Manitoba	1,248[3]	2,794	12,440,297	13,146,534	36,284,375
Saskatchewan	4,671[3]	6,022	30,964,910	34,404,910	180,303,184
Alberta	11,698	8,030	37,369,887	30,956,900	358,778,799
British Columbia	1,271	12,715	60,178,812	123,275,918	141,489,898
Northwest Territories	86	1,180	6,717,354	5,908,630	20,493,199
Yukon Territory	58	764	3,634,914	3,682,200	7,486,433
Canada	**31,611**	**140,647**	**634,510,090**	**1,298,196,256**	**2,061,643,508**

[1] Includes freight and smelter charges and cost of ores treated.

[2] Gross value of shipments less cost of process supplies, fuel, electricity, freight and smelter charges.

[3] One plant on the border between Manitoba and Saskatchewan credited to both provinces.

A summary of the industrial statistics of the principal mineral industries operating in Canada in the years 1957-59 is presented in Table **31**.

31.—Summary Statistics of the Principal Mineral Industries, 1957-59

Industry and Year	Plants or Mines	Employees	Salaries and Wages	Purchased Fuel, Electricity and Process Supplies[1]	Net Value of Shipments[2]
	No.	No.	$	$	$
Metallics **1957**	**867**	**92,167**	**413,308,141**	**1,088,705,583**	**982,697,540**
1958	**779**	**88,958**	**420,710,753**	**1,020,159,605**	**979,695,178**
1959	**846**	**91,617**	**444,158,631**	**1,175,438,378**	**1,156,519,998**
Placer gold 1957	57	243	1,180,225	457,137	2,116,716
1958	112	236	1,253,362	565,219	2,484,524
1959	112	239	1,194,713	473,296	1,989,431
Gold quartz 1957	147	16,911	63,708,680	31,064,661	95,991,241
1958	127	16,811	64,208,042	26,857,011	107,140,993
1959	139	16,777	65,519,112	29,578,141	100,519,397
Copper-gold-silver 1957	261	10,359	46,694,352	50,319,084	68,694,057
1958	244	8,875	39,745,243	55,784,884	77,993,264
1959	310	9,682	43,460,641	57,092,981	90,660,009
Silver-cobalt 1957	12	598	2,209,805	1,208,400	3,105,688
1958	12	570	2,115,670	1,159,155	3,633,390
1959	11	486	1,647,687	887,569	4,118,972
Silver-lead-zinc 1957	83	5,844	26,256,837	56,476,096	59,485,349
1958	62	4,485	20,763,855	51,986,207	46,166,133
1959	52	4,241	19,843,990	48,318,978	53,554,292
Nickel-copper 1957	85	12,124	59,807,695	26,279,245	84,148,711
1958	47	9,243	47,190,007	18,649,540	61,164,999
1959	55	11,025	57,210,303	25,586,167	84,745,910
Iron 1957	60	7,770	36,288,939	64,519,888	102,701,537
1958	59	7,404	36,032,817	46,955,612	79,175,569
1959	59	7,776	41,450,834	67,458,031	125,208,070
Miscellaneous metals 1957	139	8,705	42,386,402	28,901,585	115,788,076
1958	91	14,375	78,320,507	60,882,835	223,484,942
1959	84	13,645	76,604,136	67,935,140	265,835,151
Smelting and refining 1957	23	29,613	134,775,206	829,479,487	450,666,165
1958	25	26,959	131,081,250	757,319,142	378,451,364
1959	24	27,746	137,227,215	878,108,075	429,888,766
Non-metallics **1957**	**192**	**12,310**	**48,361,030**	**32,530,865**	**126,561,143**
1958	**193**	**11,660**	**46,894,653**	**29,422,149**	**112,405,339**
1959	**186**	**11,719**	**48,879,481**	**32,501,318**	**136,660,452**
Asbestos 1957	22	7,357	32,283,287	20,566,634	87,447,407
1958	22	6,997	32,025,137	18,538,791	76,732,532
1959	23	6,653	31,448,638	19,681,400	91,315,292
Feldspar, quartz and nepheline syenite 1957	28	450	1,737,907	1,185,023	5,310,235
1958	35	450	1,804,827	1,173,230	4,382,352
1959	38	509	2,079,284	1,401,230	5,397,136
Gypsum 1957	13	816	2,653,320	1,908,543	5,836,562
1958	13	627	2,300,288	1,265,949	3,923,210
1959	15	874	3,228,713	1,198,861	7,194,842
Iron oxide 1957	3	26	64,011	51,100	141,288
1958	3	17	31,916	17,946	98,397
1959	1	16	45,275	21,927	89,461
Mica 1957	25	45	66,283	12,996	100,462
1958	25	28	44,848	9,522	81,121
1959	14	16	37,106	7,900	56,129

For footnotes, see end of table

31.—Summary Statistics of the Principal Mineral Industries, 1957-59—concluded

Industry and Year		Plants or Mines	Em-ployees	Salaries and Wages	Purchased Fuel, Electricity and Process Supplies[1]	Net Value of Shipments[2]
		No.	No.	$	$	$
Peat	1957	35	1,168	2,542,210	1,466,080	4,432,616
	1958	38	1,447	2,484,732	1,626,172	4,559,203
	1959	38	1,333	2,659,836	1,971,560	5,937,102
Salt	1957	12	800	3,118,482	3,643,214	12,198,835
	1958	13	795	3,183,245	3,817,696	13,139,461
	1959	15	844	3,484,430	4,613,282	15,843,873
Soapstone and talc	1957	4	77	222,287	142,725	369,999
	1958	4	76	213,576	141,130	378,651
	1959	4	65	184,656	118,084	459,404
Miscellaneous non-metallics[3]	1957	50	1,571	5,673,243	3,554,550	10,723,739
	1958	40	1,223	4,806,084	2,831,713	9,110,412
	1959	38	1,409	5,711,543	3,487,074	10,367,213
Fuels	**1957**	**19,055**	**22,390** r	**83,524,387** r	**32,974,465**	**522,571,134**
	1958	**20,012**	**20,226**	**75,566,464**	**32,424,395**	**471,315,135**
	1959	**21,690**	**18,206**	**70,824,543**	**32,069,639**	**497,323,152**
Coal	1957	170	14,569	47,222,273	16,312,034	73,908,636
	1958	158	13,162	42,250,458	15,753,924	64,209,403
	1959	133	11,485	37,122,895	14,987,393	58,888,502
Natural gas	1957	3,939	2,356 r	8,604,070 r	533,602	9,929,154
	1958	3,707	1,889	7,015,967	1,029,541	10,605,885
	1959	3,574	1,881	7,484,361	1,564,584	9,744,511
Petroleum	1957	14,946	5,465	27,698,044	16,128,829	438,733,344
	1958	16,147	5,175	26,300,039	15,640,930	396,499,847
	1959	17,983	4,840	26,217,287	15,517,662	428,690,139
Structural Materials	**1957**	**9,339**	**19,002**	**65,978,769**	**59,882,407**	**241,784,590**
	1958	**8,587**	**18,696**	**67,327,775**	**59,996,675**	**253,783,980**
	1959	**8,889**	**19,105**	**70,647,435**	**58,186,921**	**271,139,906**
Clay products	1957	111	4,067	13,963,399	6,979,907	28,942,251
	1958	113	4,075	14,847,054	7,522,831	34,187,072
	1959	116	4,250	15,972,945	7,818,682	35,592,292
Cement	1957	17	3,465	15,317,388	35,886,600	61,192,441
	1958	19	3,428	15,891,560	33,767,316	66,176,534
	1959	19	3,421	16,435,823	30,579,273	67,612,521
Lime	1957	39	1,152	3,982,533	5,432,083	12,096,699
	1958	40	1,169	4,348,674	6,233,235	14,028,375
	1959	40	1,245	4,779,369	6,511,642	15,602,172
Sand and gravel	1957	8,589	5,987	18,162,499	4,432,490	87,506,864
	1958	7,832	5,957	18,225,999	4,362,877	91,919,486
	1959	8,101	6,316	19,522,393	5,057,363	99,594,098
Stone	1957	583	4,331	14,552,950	7,151,327	52,046,335
	1958	583	4,067	14,014,488	8,110,416	47,472,513
	1959	613	3,873	13,936,905	8,219,961	52,738,823
Grand Totals	**1957**	**29,453**	**145,869** r	**611,172,327** r	**1,214,093,320**	**1,873,614,407**
	1958	**29,571**	**139,540**	**610,499,645**	**1,142,002,824**	**1,817,199,632**
	1959	**31,611**	**140,647**	**634,510,090**	**1,298,196,256**	**2,061,643,508**

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[1] Includes freight and smelter charges and cost of ores treated.

[2] Gross value of shipments less cost o process supplies, fuel, electricity, freight and smelter charges.

[3] Includes natural abrasives.

Section 6.—World Production of Certain Metallic Minerals and Fuels

Table **32** shows the production of certain metallic minerals and fuels in the different countries of the world for the year 1959. These figures are taken from the *United Nations Statistical Yearbook 1960* which presents production figures for 1948-59 for a much more extensive list of mining and quarrying industries. The 1959 figures are provisional and have been converted from kilograms to ounces troy for gold, from metric tons to ounces troy for silver, and from metric tons to short tons for the other metals and fuels shown.

32.—World Production of Certain Metallic Minerals and Fuels, 1959

NOTE.—Where dashes occur throughout this table they indicate that no figures were given in the *United Nations Statistical Yearbook* either because there was no production or because the quantity was not available.

Country	Gold	Silver	Copper	Iron	Lead	Zinc	Coal	Crude Petroleum
	'000 oz. t.	'000 oz. t.	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
Albania	—	—	—	—	—	—	—	528.0
Algeria	—	—	0.3	1,102.3	11.2	40.0	134.5	1,465.0
Angola	—	—	2.1	253.5	—	—	—	56.2
Argentina	1.9	—	—	57.3	33.1	44.4	331.8	7,007.4
Australia	1,085.1	15,075.5	105.7	3,030.3	353.5	278.7	22,735.2	—
Austria	—	—	2.8	1,170.7	6.5	7.6	147.7	2,710.6
Bahrain	—	—	—	—	—	—	—	2,482.4
Bechuanaland	0.2	—	—	—	—	—	—	—
Belgium	—	—	—	55.1	—	—	25,085.3	—
Bolivia	29.0	4,469.0[1]	2.4[1]	—	24.3[1]	3.7[1]	—	454.2
Brazil	112.3	—	—	4,264.8	—	—	2,568.4	3,398.4
British Guiana	3.2	—	—	—	—	—	—	—
Brunei	—	—	—	—	—	—	—	5,941.5
Bulgaria	—	—	11.0	254.6	95.8	75.5	554.5	211.6
Burma	—	1,970.8	0.2	—	21.5	12.1	—	583.1
Cameroons	0.9	—	—	—	—	—	—	—
Canada[2]	**4,483.4**	**31,924.0**	**395.3**	**24,488.3**	**186.7**	**396.0**	**10,626.7**	**24,970.9**
Chile	78.7	1,768.3	602.0	2,747.0	2.0	1.0	1,919.1	923.7
China—								
Mainland	—	—	—	—	—	—	383,383.8	3,858.1
Taiwan	13.5	—	1.8	—	—	—	3,927.5	2.2
Colombia	397.9	102.9	—	189.6	—	—	2,755.8	8,121.8
Congo—								
Brazzaville	—	—	—	—	5.4	—	—	—
Leopoldville	351.1[3]	4,758.3	311.0	—	—	77.2	294.3	—
Cuba	—	—	9.9	—	—	—	—	29.8
Cyprus	—	—	34.7	—	—	—	—	—
Czechoslovakia	--	—	—	988.8	—	—	29,216.8	135.6
Ecuador	18.6	164.0	—	—	—	—	—	401.2
El Salvador	2.4	199.3	—	—	—	—	—	—
Ethiopia	21.9[4]	—	—	—	—	—	—	—
Fiji Islands	72.6	—	—	7.7	—	—	—	—
Finland	30.3	524.1	34.4	138.9	2.9	68.5	—	—
France	45.3	3,343.7	—	21,812.5	17.9	16.0	63,499.7	1,786.8
French Equatorial Africa	18.0	—	—	—	—	—	—	830.0
French Guiana	16.1	—	—	—	—	—	—	—
French West Africa	8.1	—	—	—	—	—	—	—
Germany—								
Eastern	—	—	27.6	461.9	—	—	3,131.7	—
Federal Republic of	31.6	11,326.7	2.0	4,714.6	58.0	90.6	139,388.3	5,625.1
Saar	—	—	—	—	—	—	17,909.2	—
Ghana	913.1	—	—	—	—	—	—	—
Greece	—	151.1	—	—	—	—	—	—
Greenland	—	—	—	—	11.7	9.3	32.0	—
Guatemala	—	—	—	—	6.4	—	—	—
Guinea	—	—	—	233.7	—	—	—	—
Honduras	—	3.2[1]	—	—	3.6[1]	1.4[5]	—	—
Hong Kong	—	—	—	75.0	—	—	—	—
Hungary	—	—	—	127.9	—	—	3,013.7	1,142.0
India	165.9	—	9.6	5,335.2	5.3	6.0	52,713.6	497.1
Indonesia	—	—	—	—	—	—	703.3	20,081.9
Iran	—	—	—	—	—	—	209.4	49,618.3
Iraq	—	—	—	—	—	—	—	46,006.1
Ireland	—	—	5.3	—	1.8	1.4	252.4	—

For footnotes, see end of table.

32.—World Production of Certain Metallic Minerals and Fuels, 1959—concluded

Country	Gold	Silver	Copper	Iron	Lead	Zinc	Coal	Crude Petroleum
	'000 oz. t.	'000 oz. t.	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
Israel	—	—	—	—	—	—	—	138.9
Italy	3.1	1,061.0	0.7	683.4	56.5	147.8	825.6	1,869.5
Japan	328.2	9,465.2	93.9	1,543.2	39.8	156.9	52,093.0	447.5
Kenya	9.1	—	—	—	—	—	—	—
Korea—								
North	—	—	—	—	—	—	6,448.5	—
Republic of	65.7	241.1	0.3	155.4	0.2	—	4,559.2	—
Kuwait	—	—	—	—	—	—	—	76,650.3
Kuwait (neutral zone)	—	—	—	—	—	—	—	6,843.1
Lebanon	—	—	—	11.0	—	—	—	—
Liberia	1.4	—	—	2,016.1	—	—	—	—
Luxembourg	—	—	—	1,865.1	—	—	—	—
Malagasy Republic	0.2	—	—	—	—	—	—	—
Malaya, Federation of	24.0	—	—	2,358.9	—	—	—	—
Mexico	313.7	44,075.4	63.2	589.7	210.2	290.9	1,748.3	15,378.3
Morocco	—	1,202.4	1.7	799.2	100.8	71.1	512.6	104.7
Mozambique	—	—	—	—	—	—	283.3	—
Netherlands	—	—	—	—	—	—	13,203.5	1,954.4
Netherlands New Guinea	—	—	—	—	—	—	—	253.5
New Caledonia	—	—	—	177.5	—	—	—	—
New Guinea (Australia)	46.7	35.4	—	—	—	—	—	—
New Zealand	36.7	6.4	—	1.1	—	—	939.2	—
Nicaragua	208.9[1]	—	—	—	—	—	—	—
Nigeria	0.8	—	—	—	0.6	—	831.1	603.0
Norway	—	—	15.9	1,093.5	2.5	10.9	300.9	—
Pakistan	—	—	—	1.1	—	—	810.2	343.9
Papua	0.2	—	—	—	—	—	—	—
Peru	150.3	27,373.1	55.7	2,306.0	127.0	157.7	189.6	2,611.4
Philippines	402.6	504.8	54.6	760.6	0.4	—	154.3	—
Poland	—	—	9.9	639.3	38.9	142.2	109,245.6	192.9
Portugal	0.4	—	—	135.6	—	—	580.9	—
Portuguese India	—	—	—	1,951.1	—	—	—	—
Qatar	—	—	—	—	—	—	—	8,810.8
Rhodesia and Nyasaland, Federation of—								
Northern Rhodesia	4.7	948.4	593.0	—	16.1	33.5	—	—
Southern Rhodesia	566.9	327.9	12.0	78.3	—	—	4,142.5	—
Romania	—	—	—	363.8	13.2	—	4,572.4	12,608.2
Sarawak	2.4	—	—	—	—	—	—	61.7
Saudi Arabia	—	—	—	—	—	—	—	59,704.5
Sierra Leone	—	—	—	993.2	—	—	—	—
South West Africa	—	1,967.6	34.4	—	68.6	21.6	—	—
Spain	—	1,816.5	9.8	2,513.3	77.3	94.7	15,004.7	68.3
Sudan	2.3	—	—	—	—	—	—	—
Surinam	5.8	—	—	—	—	—	—	—
Sweden	103.0	3,099.3	19.1	12,332.7	53.4	86.5	342.8	—
Switzerland	—	—	—	26.5	—	—	—	—
Tanganyika	85.4[1]	—	1.2[1]	—	6.9[1]	—	2.2	—
Thailand	—	—	—	4.4	1.2	—	—	—
Trinidad and Tobago	—	—	—	—	—	—	—	6,546.6
Tunisia	—	—	—	584.2	20.0	3.6	—	—
Turkey	—	—	27.6	625.0	3.3	6.4	4,344.2	411.2
Uganda	0.3[1]	—	13.3	—	—	—	—	—
Union of South Africa	20,065.5	2,022.3	55.3	2,028.3	0.2	—	40,182.5	—
Union of Soviet Socialist Republics	—	—	—	60,347.1	—	—	402,532.0	142,859.5
United Arab Republic	2.5	—	—	99.2	—	—	—	3,409.4
United Kingdom	—	—	—	4,663.9	2.6	—	230,915.4[6]	159.8
United States	1,635.0	23,000.6	824.7	35,416.2	255.6	425.3	428,169.6	383,526.0
Venezuela	53.9	—	—	11,187.4	—	—	37.5	163,074.8
Viet Nam—								
North	—	—	—	—	—	—	2,204.6	—
Republic of	—	—	—	—	—	—	22.0	—
Yugoslavia	62.3	2,826.1	38.1	1,108.9	101.9	66.9	1,430.8	652.6

[1] Exports. [2] Final DBS figures. [3] Includes Ruanda-Urundi. [4] Excludes Eritrea.
[5] Exports to United States. [6] Excludes Northern Ireland.

CHAPTER XII.—POWER GENERATION AND UTILIZATION

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Section 1.—Water Power Resources—Available and Developed*

Canada, a land of many lakes and rivers, has been favoured by nature with great water power resources distributed across the country. Adequate precipitation and favourable topography result in numerous fast-flowing rivers which offer excellent opportunities for the development of hydraulic power; with the exception of the prairies of the mid-west, water power resources of importance are found in almost every part of the country. British Columbia, traversed by three distinct mountain ranges and with a relatively high rate of precipitation, has many mountain rivers that offer opportunity for power development. Extensive water power resources are available in the Yukon Territory, principally on the Yukon River and its tributaries. Alberta, although a prairie province, also has mountain streams from the Rockies and great reserves of undeveloped power on its large northern rivers. The Canadian Shield of Precambrian rock, which forms an arc around Hudson Bay and covers a portion of the Northwest Territories and northern Saskatchewan as well as large parts of Manitoba, Ontario, Quebec and Labrador, is a rough, forest-covered area characterized by innumerable lakes and by rivers with many falls and rapids. The Great Lakes–St. Lawrence River system and its tributaries provide the extensive power resources of Ontario and Quebec upon which their status as the principal manufacturing provinces of Canada is dependent and which compensate in large degree for their lack of indigenous coal. In New Brunswick and Nova Scotia and on the Island of Newfoundland precipitation is moderately heavy and the rivers, though not large, afford numerous possibilities for power developments of moderate size. In Labrador the potential resources of the Hamilton River are outstanding.

An accurate comparison of the magnitude and development of Canada's water power resources with those of other countries is not possible because world statistics are incomplete and are tabulated on differing bases. However, from the information available, it appears that Canada ranks second among the countries of the world in total installed capacity, being exceeded only by the United States; in installation per thousand population,

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* Revised by the Water Resources Branch, Department of Northern Affairs and National Resources, Ottawa.

Canada is exceeded only by Norway. Canada is in approximately fifth place in potential power resources but, on the whole, those resources are more readily available to prospective markets than are the water power resources of other countries that outrank Canada, an exception being the United States. In particular might be mentioned the enormous potential resources of the great river systems of Africa and Asia.

Table **1** gives a summary of the water power resources of Canada and their development as at the beginning of 1961.

1.—Available and Developed Water Power, by Province, as at Jan. 1, 1961

Province or Territory	Available 24-Hour Power at 80 p.c. Efficiency		Turbine Installation[1]
	At Ordinary Minimum Flow	At Ordinary Six-Months Flow	
	hp.	hp.	hp.
Newfoundland	1,608,000	3,264,000	384,025
Prince Edward Island	500	3,000	1,660
Nova Scotia	30,500	177,000	184,538
New Brunswick	123,000	334,000	254,258
Quebec	10,896,000	20,445,000	12,440,145
Ontario	5,496,000	7,701,000	7,814,562
Manitoba	3,492,000	5,798,000	988,900
Saskatchewan	550,000	1,120,000	122,135
Alberta	911,000	2,453,000	414,455
British Columbia	18,200,000[2]	19,400,000[2]	3,700,326
Yukon Territory	4,678,000[2]	4,700,000[2]	38,190
Northwest Territories	374,000	808,000	22,250
Canada	**46,359,000[2]**	**66,203,000[2]**	**26,375,444**

[1] Includes water wheels and hydraulic turbines installed. [2] This figure reflects the effect of possible stream-flow regulation based on known storage potentials.

The figures given in the first and second columns of Table **1** represent 24-hour power and are based upon rapids, falls and power sites of which the actual drop, or the head of possible concentration, has been measured or at least carefully estimated. Tabulations of potential power in Canada are not complete, as many unrecorded rapids and falls of undetermined power capacity exist on rivers and streams throughout the country, particularly in the less explored northern districts. Apart from areas where definite studies have been carried out and the results recorded, no consideration has been given to the power concentrations that are feasible on rivers and streams of gradual gradient where economic heads may possibly be created by the construction of dams. Furthermore, the estimates of power available in different provinces do not include the power potential of major river diversions which have been investigated but not developed. Thus, in Table **1**, the figures of available power under the two conditions of stream flow represent only the minimum water power possibilities of Canada.

The figures in the third column of Table **1** give the total capacity of the water wheels actually installed and should not be placed in direct comparison with those in the first and second columns to deduce the percentage of the available water power resources developed. While the maximum economic turbine installation at any site can be determined only by careful consideration of all conditions and circumstances pertinent to its individual development, it is usual practice to install turbines that have a total capacity in excess of the power equivalent of the six-months flow at the site.

The consistent growth of hydraulic turbine capacity is shown in Table **2**. The average annual increase of 56,000 hp. from 1900 to 1905 was stepped up sharply in subsequent years because of improvements in the transmission of electricity and the building of large generating stations. During the period 1906-22, development proceeded at the fairly uniform rate of 150,000 hp. per annum but the rate of installation increased sharply in

1923 and continued at about 377,000 hp. each year from 1923 to 1935. As an aftermath of the economic depression, the rate of installation was low during the years 1936-39 but increased to an average of 481,000 hp. per annum during the period 1940-43 to satisfy war requirements. Few developments were undertaken in the later war years or in the immediate postwar period so that only a small amount of new capacity came into operation in the 1944-47 period. However, the effects of the later postwar program of construction are apparent in the large growth during the years 1948-60, when the average rate was over 1,200,000 hp. per annum. Although estimates indicate only a moderate increase in installed capacity for 1961, present programs of expansion point to a rapid rate of growth for subsequent years.

2.—Hydraulic Turbine Horsepower Installed, by Province, as at Dec. 31, Decennially 1900-50 and Annually 1951-60

Note.—Figures for the years 1900–30 are given in the 1939 Year Book, p. 362; for 1931–39 in the 1946 edition, p. 362; and for 1940–49 in the 1954 edition, pp. 556–557.

Year	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	hp.	hp.	hp.	hp.	hp.	hp.
1900	—	1,521	19,810	4,601	82,864	53,876
1910	—	1,760	31,476	11,197	334,763	490,821
1920	—	2,233	37,623	21,976	955,090	1,057,422
1930	—	2,439	114,224	133,681	2,718,130	2,088,055
1940	—	2,617	139,217	133,347	4,320,943	2,597,595
1950	262,810	2,299	150,960	133,111	6,372,812	3,513,840
1951	279,160	2,299	150,960	132,911	6,755,351	3,718,505
1952	292,660	2,299	162,455	135,511	7,263,621	3,948,466
1953	311,150	1,900	162,433	164,130	7,719,122	4,006,686
1954	323,150	1,882	170,908	164,130	7,773,822	4,845,486
1955	329,150	1,882	177,018	164,130	7,975,657	5,367,866
1956	336,750	1,882	179,718	164,130	8,489,957	5,443,766
1957	337,970	1,882	181,958	209,130	8,979,857	5,824,766
1958	368,935	1,660	183,168	254,375	9,857,607	7,150,851
1959 r	370,925	1,660	184,538	254,258	11,263,645	7,788,062
1960	384,025	1,660	184,538	254,258	12,440,145	7,814,562

Year	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and N.W.T.	Canada
	hp.	hp.	hp.	hp.	hp.	hp.
1900	1,000	—	280	9,366	5	173,323
1910	38,800	30	655	64,474	3,195	977,171
1920	85,325	35	33,122	309,534	13,199	2,515,559
1930	311,925	42,035	70,532	630,792	13,199	6,125,012
1940	420,925	90,835	71,997	788,763	18,199	8,584,438
1950	595,200	111,835	107,225	1,284,208	28,450	12,562,750
1951	596,400	111,835	207,825	1,358,808	28,450	13,342,504
1952	716,900	111,835	207,825	1,432,858	31,450	14,305,880
1953	716,900	109,835	207,960	1,496,518	32,440	14,929,074
1954	756,900	109,835	258,710	2,246,868	32,440	16,684,131
1955	796,900	109,835	284,010	2,271,460	33,240	17,511,148
1956	796,900	109,835	285,010	2,514,960	33,240	18,356,148
1957	778,900	109,835	308,010	3,122,460	36,240	19,891,008
1958	778,900	109,825	312,595	3,310,460	51,240	22,379,626
1959 r	778,900	128,835	312,455	3,499,106	51,240	24,633,624
1960	988,900	132,135	414,455	3,700,326	60,440	26,375,444

The availability of large amounts of hydro-electric energy has greatly fostered the economical utilization of the natural products from land, forest and mine. Low-cost power is fundamental in meeting the enormous requirements of Canada's great pulp and paper and smelting and refining industries. Indeed, Canada's outstanding industrial growth in the postwar period has been made in conjunction with accelerated development of water power resources. From hydro-electric plants ranging in capacity from a few hundred to more than 1,000,000 hp., networks of transmission lines carry power to most urban centres and to an increasing number of rural districts. This wide distribution of power has facilitated the decentralization of industry, permitting the carrying on of manufacturing processes in many of the smaller centres of population. Low-cost domestic electrical service also contributes in no small measure to the high standard of living in Canada.

Table **3** indicates the respective amounts of water power that have been developed by utilities and by industrial establishments. For this tabulation, utilities are defined as companies, municipalities or individuals who sell most of the power they develop. In some instances they include also certain subsidiary companies whose main purpose is to develop and sell power to a parent company for industrial purposes. The total of 20,354,543 hp. of turbine capacity installed in plants operated by utilities represents 77 p.c. of Canada's total installed capacity at Dec. 31, 1960.

Industrial establishments are defined as companies or individuals developing power mainly for their own use. Total installed capacity in plants operated by industrial establishments amounted to 6,020,901 hp. at Dec. 31, 1960. In addition, industry purchased a considerable amount of electricity from utilities.

The figure of total hydraulic installation in Canada (26,375,444 hp.) is the cumulative total of all existing installations of water wheels and hydraulic turbines irrespective of whether or not the equipment has been in use during the year. It has been adjusted to Dec. 31, 1960 by the inclusion of new installations completed during the year and by deletions of old units that were dismantled.

3.—Installed Water Power Capacity, by Province, as at Dec. 31, 1960

Province or Territory	Turbine Installation		Total[3]
	Utilities[1]	Industries[2]	
	hp.	hp.	hp.
Newfoundland	270,305	113,720	384,025
Prince Edward Island	240	1,420	1,660
Nova Scotia	169,345	15,193	184,538
New Brunswick	227,940	26,318	254,258
Quebec	8,842,978	3,597,167	12,440,145
Ontario	7,371,160	443,402	7,814,562
Manitoba	973,000	15,900	988,900
Saskatchewan	125,500	6,635	132,135
Alberta	413,390	1,065	414,455
British Columbia	1,919,945	1,780,381	3,700,326
Yukon and Northwest Territories	40,740	19,700	60,440
Canada	**20,354,543**	**6,020,901**	**26,375,444**
Percentage of total installation	77	23	100

[1] Includes only hydro-electric installations that develop power mainly for sale. [2] Includes only water power installations developed by industries mainly for their own use. [3] Includes installed capacity of all water wheels and hydraulic turbines.

Section 2.—Thermal Power[*]

Thermal electric power capacity has expanded at a phenomenal rate since World War II. The ratio of generating capacity in thermal and hydro stations has sharply narrowed from about 1:15 in 1945 to 1:5 in 1959.

The accelerating trend toward thermal power developed significantly within the years 1950-59, particularly in the Atlantic and Prairie Provinces and in British Columbia. While Quebec, Ontario and the Northwest Territories depend less on thermally generated power than the remainder of Canada, these regions too will eventually have need for such power.

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[*] Revised in the Transportation and Public Utilities Section, Public Finance and Transportation Division, Dominion Bureau of Statistics.

This trend has been brought about by a number of factors, mainly of economic expediency. Canada's rapidly expanding economy demands ever-increasing supplies of electric energy to serve a growing population and industrial complex. Supplies of hydraulic energy within economic transmission distance of populated areas are becoming fewer and more costly to develop. Expenditure of large amounts of capital required to develop single blocks of hydro power at distant points cannot be justified unless there is immediate use for all of the power generated at a load factor which warrants its transmission over long distances. Moreover, the load on the established electrical systems in many areas now needs firming with extra supplies of reliable thermal energy not heretofore required, and this can be provided at lower capital cost per unit of installed capacity than by hydro facilities which may be affected by periodic water shortages.

The trend is well exemplified by reference to the vast complex of The Hydro-Electric Power Commission of Ontario, one of the world's largest single power operations. At the end of 1960 this system had generating resources of 5,906,950 kw. of which only 995,900 kw. were installed in thermal stations. Additional steam capacity under construction amounted to 1,800,000 kw. with forecast of about 3,000,000 kw. to meet requirements by 1970. The Commission's long-term forecast estimates that, if nuclear electricity is not available at competitive cost by 1980, 26,500,000 tons of coal annually, at a cost of some $300,000,000, will be required to fuel its steam capacity which by 1980 may amount to 10,000,000 kw. or twice the available generating facilities available from hydraulic sources.

The report of the seventh survey of capability and load shows that from 1950 to 1960 the net generating capability of thermal stations increased by 385 p.c., as compared with 115 p.c. for hydro stations, with a forecast that by the end of 1963 thermal station net generating capability will have advanced over 1950 by 653 p.c. as against 128 p.c. for hydro stations.

Table 4 gives, by province, the estimated amount of increase in net generating capability and the percentage annual increment in thermal and hydro facilities for the period 1950-63. These data clearly indicate the growing importance of thermal generating capacity in comparison with hydro, and that, proportionately, the rate of growth is higher than for hydro in all provinces.

4.—Estimated Increase in Net Generating Capability, by Province, for the Period 1950-63

Province or Territory	Increase in Thermal Facilities		Increase in Hydro Facilities	
	Amount	Annual Increment[1]	Amount	Annual Increment[1]
	'000 kw.	p.c.	'000 kw.	p.c.
Newfoundland	32	10.5	197	6.0
Prince Edward Island	27	10.5	—	—
Nova Scotia	271	10.9	40	2.4
New Brunswick	154	7.3	131	7.2
Quebec	86	11.9	4,847	6.0
Ontario	2,324	21.6	3,202	6.8
Manitoba	284	8.6	305	4.4
Saskatchewan	540	13.1	160	8.4
Alberta	761	17.4	236	10.8
British Columbia	606	16.6	1,889	9.4
Yukon and Northwest Territories	9	—	23	7.6
Canada	**5,094**	**16.7**	**11,030**	**6.9**

[1] Compounded. A sustained annual percentage increase of 7.5 roughly indicates that the generating capability will double in ten years.

Table 5 shows, provincially, the amount of installed capacity and electricity generated in thermal stations in 1959, with percentage of total in each case. Preliminary figures for the electricity generated in 1960 are included.

5.—Installed Thermal Generating Capacity and Electricity Generated, by Province, 1959 and 1960

Province or Territory	Capacity in Thermal Stations		Generation by Thermal Stations			
	1959		1959		1960p	
	Amount	P.C. of Total[1]	Amount	P.C. of Total[1]	Amount	P.C. of Total[1]
	'000 kw.		'000,000 kwh.		'000,000 kwh.	
Newfoundland	29	10.6	78	5.4	59	4.0
Prince Edward Island	26	100.0	71	100.0	79	100.0
Nova Scotia	371	74.3	971	58.8	1,149	64.5
New Brunswick	201	51.7	697	38.4	841	48.7
Quebec	90	1.1	233	0.5	271	0.5
Ontario	1,121	16.7	991	3.0	823	2.3
Manitoba	197	25.4	63	1.7	66	1.7
Saskatchewan	584	84.1	1,512	72.0	1,659	72.8
Alberta	546	71.3	2,255	72.8	2,540	74.1
British Columbia	401	14.8	672	5.4	729	5.5
Yukon and Northwest Territories	7	15.2	31	16.8	13	7.8
Canada	**3,573**	**16.9**	**7,574**	**7.5**	**8,229**	**7.2**

[1] Combined thermal and hydro generating capacity.

Table 6 gives the maximum size of steam-driven turbo-generator units in thermal stations and shows clearly the trend toward the installation of larger and more efficient generating facilities capable of producing lower cost electric energy from the mineral fuels—coal, oil and natural gas.

6.—Maximum Size of Turbo-Generator Units in Thermal Central Stations, 1945, 1950 and 1955-61

Source: Prepared by the Fuels Division, Department of Mines and Technical Surveys, Ottawa.

Year	Eastern Canada		Central Canada		Western Canada	
	Megawatt Capacity	Units	Megawatt Capacity	Units	Megawatt Capacity	Units
		No.		No.		No.
1945	12.5	1	—	—	15	4
1950	15	1	6	1	30	1
1955	25	1	100	4	30	3
1956	25	1	100	4	66	1
1957	50	1	100	4	66	1
1958	50	1	100	4	66	2
1959	50	2	200	2	66	2
1960	50	2	200	4	150	1
1961	50	3	300	1	150	3

Heretofore, a fair proportion of the thermal generating capacity was operated at extremely low rates of load factor, particularly in small stations serving isolated communities and as standby to hydro facilities. However, progressive increase in load and need for firmer output is making it economical to install larger and more efficient thermal units, essentially in the larger stations serving widespread system demands. Here, the capacity is provided mainly by steam-motivated turbo-alternators, the largest of which are capable of generating a kilowatt-hour with as little as two-thirds of a pound of coal. From 1954 to 1959, 16 gas-turbine-driven generating sets with capacities of from 8,400 to 30,000 kw. were installed in Western Canada. These sets have the advantage of low first cost and extreme flexibility, and are well suited for peaking operations in an integrated system.

Section 3.—Electric Power Statistics

Electric power statistics presented in this Section are based on reports of all electrical utilities and all industrial establishments that generate energy regardless of whether or not any is sold, and therefore show the total production and distribution of electric energy in Canada. Utilities are defined as companies, commissions, municipalities or individuals whose primary function is to sell most of the electric energy which they have either generated or purchased. Industrial establishments are defined as companies or individuals that generate electricity mainly for use in their own plants.

The current series of electric power statistics dates back only to 1956. Earlier reports, entitled "Central Electric Stations", were concerned solely with the electrical utility industry and hence excluded statistics relating to power produced by industrial establishments for their own use, although power sold by such establishments was included.

The figures of total water and thermal power generated for the years 1943-55 shown in Table 7 are compiled on the old basis, figures for 1956 are shown on both bases for comparative purposes, and those for later years are on the new basis.

7.—Electric Energy Generated, by Type of Station 1943-59, and by Province 1958 and 1959

Year and Province or Territory	Generated by—		Total	Year and Province or Territory	Generated by—		Total
	Water Power	Thermal Power			Water Power	Thermal Power	
	'000 kwh.	'000 kwh.	'000 kwh.		'000 kwh.	'000 kwh.	'000 kwh.
1943	39,660,312	819,281	40,479,593	1952	57,023,530	2,385,668	59,409,198
1944	39,553,352	1,045,427	40,598,779	1953	58,926,462	3,934,465	62,860,927
1945	39,131,020	999,034	40,130,054	1954	62,572,316	3,364,124	65,936,440
1946	40,692,395	1,044,592	41,736,987	1955	69,478,003	3,432,589	72,910,592
1947	42,273,167	1,151,632	43,424,799	1956	73,524,583	4,479,770	78,004,353
1948	41,070,095	1,319,586	42,389,681	1956[1]	81,839,968	6,543,333	88,383,301
1949	42,779,199	1,639,374	44,418,573	1957[1]	83,373,220	7,668,860	91,012,080
1950	46,624,218	1,869,500	48,493,718	1958[1]	90,509,200	6,975,089[r]	97,484,289[r]
1951	52,955,002	1,896,842	54,851,844	1959[1]	97,039,830	7,573,734	104,613,564
1958[1]				**1959[1]**			
Nfld.	1,340,843	70,329	1,411,172	Nfld.	1,370,826	77,812	1,448,638
P.E.I.	537	62,497	63,034	P.E.I.	340	70,802	71,142
N.S.	645,600	917,142	1,562,742	N.S.	679,450	970,592	1,650,042
N.B.	1,023,020	589,662	1,612,682	N.B.	1,115,835	697,400	1,813,235
Que.	43,418,062	217,506	43,635,568	Que.	44,621,143	232,783	44,853,926
Ont.	28,012,573	1,238,807	29,251,380	Ont.	32,386,820	991,331	33,378,151
Man.	3,113,166	139,854	3,253,020	Man.	3,580,427	62,816	3,643,243
Sask.	568,480	1,347,716	1,916,196	Sask.	587,366	1,512,312	2,099,678
Alta.	990,457	1,737,298	2,727,755	Alta.	842,259	2,255,207	3,097,466
B.C.	11,254,743	627,960	11,882,703	B.C.	11,701,239	671,978	12,373,217
Yukon and N.W.T.	141,719	26,318[r]	168,037[r]	Yukon and N.W.T.	154,125	30,701	184,826
Canada, 1958	**90,509,200**	**6,975,089**[r]	**97,484,289**[r]	**Canada, 1959**	**97,039,830**	**7,573,734**	**104,613,564**

[1] New series, see immediately preceding text.

Of the total generation in 1959 of 104,613,564,000 kwh., 92.8 p.c. was produced from water power and 7.2 p.c. was generated thermally; the proportions differed somewhat among provinces as shown in the following statement.

Province	*Hydro*	*Thermal*	*Province or Territory*	*Hydro*	*Thermal*
	p.c.	p.c.		p.c.	p.c.
Newfoundland	94.6	5.4	Manitoba	98.3	1.7
Prince Edward Island	0.5	99.5	Saskatchewan	28.0	72.0
Nova Scotia	41.2	58.8	Alberta	27.2	72.8
New Brunswick	61.5	38.5	British Columbia	94.6	5.4
Quebec	99.5	0.5	Yukon and N.W.T.	83.4	16.6
Ontario	97.0	3.0			

Table **8** gives summary figures of power production and distribution classified by province and Tables **9** and **10** give figures classified by type of production establishment. Total installed capacity in Canada amounted to 21,108,920 kw. in 1959, an increase of 2,439,502 kw. over 1958. Of the 1959 total, 16,937,290 kw. were accounted for by utilities and the remainder by industrial establishments. During 1958 and 1959 total sales to ultimate customers amounted to 65,323,721,000 kwh. and 71,888,110,000 kwh., respectively, of which 99.7 p.c. was sold each year by utilities.

Sales to power customers made up 61.6 p.c. of the total in 1958 and 61.5 p.c. in 1959, sales to domestic and farm customers were 26.5 p.c. and 26.4 p.c., and commercial sales 11.1 p.c. and 11.2 p.c. in the respective years. Exports to the United States in 1959 amounted to 4,580,619,000 kwh. compared with 4,074,513,000 kwh. in 1958.

8.—Summary Electric Power Statistics, by Province, 1958 and 1959

Year and Province or Territory	Installed Generating Capacity	Energy Made Available in Canada	Exported to U.S.A.	Ultimate Customers	Total Revenue from Ultimate Customers	Electrical Utilities	
						Employees	Salaries and Wages
	kw.	'000 kwh.	'000 kwh.	No.	$'000	No.	$'000
1958							
Newfoundland	279,726	1,374,198	—	59,647	9,362	586	1,749
Prince Edward Island	25,641	63,034	—	19,180	2,158	201	569
Nova Scotia	419,265	1,552,793	—	189,968	24,953	1,542	5,445
New Brunswick	389,337	1,496,335	142,789	145,779	18,676	1,142	3,968
Quebec	7,057,964	37,154,494	526,336	1,280,379	185,207	9,799	40,828
Ontario	5,869,746[r]	32,047,621	3,404,051	1,827,832	267,585	16,409	76,082
Manitoba	775,012[r]	3,757,372	28	267,186	31,127	2,513	9,321
Saskatchewan	550,652	1,419,247	—	230,309	29,947	2,141	9,477
Alberta	735,900	2,747,593	—	316,106	43,139	1,932	8,498
British Columbia	2,522,962	11,874,114	1,309	469,366	77,458	3,019	13,757
Yukon and N.W.T.	43,213	168,037[r]	—	3,882	2,091	110	517
Canada, 1958	**18,669,418**[r]	**93,654,838**[r]	**4,074,513**	**4,809,634**	**691,703**	**39,394**	**170,211**
1959							
Newfoundland	274,257	1,407,345	—	62,033	9,814	591	1,883
Prince Edward Island	25,641	71,142	—	21,090	2,362	177	563
Nova Scotia	498,515	1,636,058	—	194,161	25,701	1,583	5,940
New Brunswick	389,237	1,682,740	158,621	147,660	20,655	1,194	4,204
Quebec	8,228,234	38,663,613	555,358	1,335,133	201,167	9,755	42,134
Ontario	6,698,572	35,607,210	3,865,099	1,903,152	288,473	16,560	82,715
Manitoba	775,217	4,276,731	36	282,417	34,152	2,524	10,349
Saskatchewan	693,958	1,521,405	—	241,519	33,568	2,387	10,837
Alberta	766,452	3,126,776	—	339,449	49,242	1,956	9,072
British Columbia	2,713,334	12,365,944	1,505	487,487	87,668	2,559	14,371
Yukon and N.W.T.	45,503	184,826	—	4,619	2,970	154	721
Canada, 1959	**21,108,920**	**100,543,790**	**4,580,619**	**5,018,720**	**755,772**	**39,440**	**182,789**

9.—Summary Electric Power Statistics, by Type of Establishment, 1958 and 1959

Year and Item		Electrical Utilities			Industrial Establishments	Total
		Publicly Operated	Privately Operated	Total		
1958						
Installed generator capacity	kw.	9,567,285r	5,301,289	14,868,574r	3,800,844	18,669,418r
Energy generated	'000 kwh.	46,828,684	29,124,448	75,953,132	21,531,157r	97,484,289r
Hydro	"	*43,585,617*	*27,585,651*	*71,171,268*	*19,337,932*	*90,509,200*
Thermal	"	*3,243,067*	*1,538,797*	*4,781,864*	*2,193,225*r	*6,975,089*r
Energy Made Available in Canada	**'000 kwh.**	..	..	..	..	**93,654,838**r
Disposal of energy in Canada	'000 kwh.	45,468,293r	27,932,943r	73,401,236	204,869	73,606,105
Energy exported to United States	"	3,547,427	443,651	3,991,078	83,435	4,074,513
Ultimate customers in Canada	No.	3,332,713r	1,465,068r	4,797,781	11,853	4,809,634
Domestic and farm	"	*2,912,770*r	*1,265,390*r	*4,178,160*	*10,786*	*4,188,946*
Commercial	"	*352,483*	*162,587*	*515,070*	*948*	*516,018*
Power	"	*64,857*	*34,860*	*99,717*	*101*	*99,818*
Street lighting	"	*2,603*	*2,231*	*4,834*	*18*	*4,852*
Revenue from ultimate customers	$'000	452,239	237,446	689,685	2,018	691,703
Revenue from exports to United States.	"	10,589	2,366	12,955	424	13,379
Employees	No.	28,149	11,245	39,394	..	...
Salaries and wages	$'000	122,208	48,003	170,211	..	...
1959						
Installed generator capacity	kw.	11,213,376	5,723,914	16,937,290	4,171,630	21,108,920
Energy generated	'000 kwh.	53,395,382	29,653,503	83,048,885	21,564,679	104,613,564
Hydro	"	*50,140,055*	*27,627,690*	*77,767,745*	*19,272,085*	*97,039,830*
Thermal	"	*3,255,327*	*2,025,813*	*5,281,140*	*2,292,594*	*7,573,734*
Energy Made Available in Canada	**'000 kwh.**	..	..	..	..	**100,544,947**
Disposal of energy in Canada	'000 kwh.	51,253,119	29,440,885	80,694,004	184,440	80,878,444
Energy exported to United States	"	4,035,281	435,986	4,471,267	109,352	4,580,619
Ultimate customers in Canada	No.	3,500,066	1,508,557	5,008,623	10,097	5,018,720
Domestic and farm	"	*3,069,321*	*1,303,019*	*4,372,340*	*9,224*	*4,381,564*
Commercial	"	*361,925*	*165,848*	*527,773*	*806*	*528,579*
Power	"	*66,042*	*37,416*	*103,458*	*49*	*103,507*
Street lighting	"	*2,778*	*2,274*	*5,052*	*18*	*5,070*
Revenue from ultimate customers	$'000	495,179	258,853	754,032	1,740	755,772
Revenue from exports to United States.	"	17,130	11,778	28,908	784	29,692
Employees	No.	28,685	10,755	39,440	..	...
Salaries and wages	$'000	133,505	49,284	182,789	..	...

10.—Electric Power Generated classified by Type of Establishment, by Province, 1958 and 1959

Year and Province or Territory	Electrical Utilities		Industrial Establishments	Total
	Publicly Operated	Privately Operated		
	'000 kwh.	'000 kwh.	'000 kwh.	'000 kwh.
1958				
Newfoundland	597	991,478	419,097	1,411,172
Prince Edward Island	3,142	59,887	5	63,034
Nova Scotia	508,975	890,491	163,276	1,562,742
New Brunswick	723,202	474,448	415,032	1,612,682
Quebec	12,804,471	19,232,311	11,598,786	43,635,568
Ontario	25,859,280	1,331,309	2,060,791	29,251,380
Manitoba	3,214,018	—	39,002	3,253,020
Saskatchewan	1,144,854	664,716	106,626	1,916,196
Alberta	846,817	1,626,867	254,071	2,727,755
British Columbia	1,638,495	3,842,193	6,402,015	11,882,703
Yukon and Northwest Territories	84,833	10,748	72,456r	168,037r
Canada, 1958	**46,828,684**	**29,124,448**	**21,531,157**r	**97,484,289**r

10.—Electric Power Generated classified by Type of Establishment, by Province, 1958 and 1959—concluded

Year and Province or Territory	Electrical Utilities		Industrial Establishments	Total
	Publicly Operated	Privately Operated		
	'000 kwh.	'000 kwh.	'000 kwh.	'000 kwh.
1959				
Newfoundland	—	1,045,510	403,128	1,448,638
Prince Edward Island	5,137	66,005	—	71,142
Nova Scotia	552,623	940,320	157,099	1,650,042
New Brunswick	1,152,302	153,614	507,319	1,813,235
Quebec	14,132,316	19,159,617	11,561,993	44,853,926
Ontario	29,822,485	1,498,395	2,057,271	33,378,151
Manitoba	3,598,423	—	44,820	3,643,243
Saskatchewan	1,325,180	673,217	101,281	2,099,678
Alberta	952,938	1,877,108	267,420	3,097,466
British Columbia	1,746,275	4,230,458	6,396,484	12,373,217
Yukon and Northwest Territories	107,703	9,259	67,864	184,826
Canada, 1959	**53,395,382**	**29,653,503**	**21,564,679**	**104,613,564**

Average domestic and farm consumption rose from 4,128 kwh. in 1958 to 4,338 kwh. in 1959. Among the provinces the averages in 1959 varied from a low of 1,617 kwh. in Prince Edward Island to a high of 5,993 kwh. in Manitoba. For domestic and farm customers the average annual bill was $69.76 in 1959 as against $66.49 in 1958, an increase of 4.9 p.c.

Although many utilities do not keep records on farm customers separate from other domestic customers, the data reported on farm service indicate that the average consumption rose from 3,686 kwh. per customer in 1958 to 4,086 kwh. in 1959 and the average bill from $86.46 to $93.05.

11.—Domestic and Farm Service by Electrical Utilities and Industrial Establishments, 1939, 1945 and 1957-59

Item		1939	1945	1957	1958	1959
Customers	No.	1,623,672	1,987,360	4,004,200	4,188,946	4,381,564
Kilowatt-hours sold	'000	2,310,891	3,365,497	15,857,618	17,290,984	19,007,111
Revenue received	$'000	43,793	55,736	257,038	278,531	305,662
Kilowatt-hours per customer	No.	1,423	1,693	3,960	4,128	4,338
Average annual bill	$	26.97	28.05	64.19	66.49	69.76
Revenue per kwh.	cts.	1.90	1.66	1.62	1.61	1.61

In 1959, natural gas accounted for 50.2 p.c. of thermal generation by utilities, coal for 35.9 p.c. and petroleum fuels for 13.9 p.c.; corresponding percentages in 1958 were 40.2 p.c., 46.2 p.c. and 13.6 p.c., respectively.

12.—Fuel Used by Electrical Utilities to Generate Power, by Province, 1958 and 1959

Year and Province or Territory	Coal		Petroleum Fuels		Gas	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	$	Imp. gal.	$	Mcf.	$
1958						
Newfoundland	—	—	796,232	86,565	—	—
Prince Edward Island	—	—	5,598,004	401,392	—	—
Nova Scotia	431,573	4,523,936	5,164,855	393,898 r	—	—
New Brunswick	144,498	1,450,347	1,803,145	205,474	—	—
Quebec	—	—	560,116	105,996	—	—
Ontario	316,561	2,784,018	872,617	160,362	—	—
Manitoba	97,108	457,305	296,071	61,161	506,482	171,998
Saskatchewan	502,394	1,207,760	30,741,651	1,727,977	7,149,693	2,048,312
Alberta	162,802	214,368	827,204	110,465	19,085,865	2,119,185
British Columbia	—	—	5,147,583	1,006,426	1,153,657	278,992
Yukon and Northwest Territories	—	—	577,584	139,496	—	—
Canada, 1958	**1,654,936**	**10,637,734**	**52,385,062**	**4,399,212** r	**27,895,697**	**4,618,487**

12.—Fuel Used by Electrical Utilities to Generate Power, by Province, 1958 and 1959—concluded

Year and Province or Territory	Coal		Petroleum Fuels		Gas	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	$	Imp. gal.	$	Mcf.	$
1959						
Newfoundland	—	—	3,070,850	260,825	—	—
Prince Edward Island	—	—	6,302,206	431,147	—	—
Nova Scotia	426,057	4,484,380	9,042,178	623,874	—	—
New Brunswick	140,971	1,418,041	2,957,208	306,659	—	—
Quebec	—	—	2,072,851	399,585	—	—
Ontario	195,823	1,688,222	760,953	142,151	64,266	23,047
Manitoba	34,080	160,750	442,642	79,775	364,680	114,532
Saskatchewan	435,142	1,094,093	31,276,799	1,784,400	10,768,447	1,480,636
Alberta	187,023	241,366	983,069	120,033	25,156,378	2,991,350
British Columbia	26	319	4,869,435	884,683	1,453,821	348,106
Yukon and Northwest Territories	—	—	865,811	207,083	—	—
Canada, 1959	**1,419,122**	**9,087,171**	**62,644,002**	**5,240,215**	**37,807,592**	**4,957,671**

Section 4.—Water and Thermal Power Developments in the Provinces and Territories, 1960

The total of 1,741,820 hp. of new hydro-electric capacity installed during 1960, while falling short of the capacity installed in each of the preceding two years, nevertheless represented a significant addition to Canada's total installed hydro-electric capacity. Construction under way at the year-end was expected to yield about 243,000 hp. of new capacity in 1961 and an additional 4,500,000 hp. within the following few years. Provision was being made for a further 1,000,000 hp. as required in subsequent years. Progress in hydro-electric and thermal-electric construction during 1960 is outlined below, by province.

Atlantic Provinces.—In Labrador, the Iron Ore Company of Canada doubled the capacity of its Menihek Rapids development on the Ashuanipi River by the addition of a 12,000-hp. unit. The Hamilton Falls Power Corporation continued construction of its Twin Falls development on the Unknown River where an initial installation comprising two units of 60,000 hp. each is scheduled for completion by mid-1962. Ultimate development of this site is expected to reach 300,000 hp. On the Island of Newfoundland, the United Towns Electric Company Limited installed a 3,200-hp. unit at its Heart's Content development on Heart's Content Brook, to replace two smaller units totalling 1,500 kw. which were dismantled. Two other hydro-electric developments were in the planning stage. One of these, to be constructed by the Southern Newfoundland Power and Development Limited on the Salmon River at the head of Bay d'Espoir, will have an initial installation of two units of 38,500 hp. each, and an ultimate development of up to 350,000 hp.; the other, to be constructed by the Bowater Power Company Limited on Hinds Brook, will have an installed capacity of 54,000 hp. In the field of thermal-electric generation, Tilt Cove Power Corporation completed the installation of a 5,000-kw. unit at its Tilt Cove steam plant and construction was under way for completion in 1961 of two units of 2,100 kw. each at the Atlantic Coast Copper Company Limited steam plant at Little Bay. Newfoundland Power Commission completed construction of two small diesel plants, one with a 200-kw. capacity in one unit at Happy Valley in Labrador, and the other with a total capacity of 90 kw. in three units at Trepassy. Newfoundland Light and Power Company Limited completed installation of two small diesel plants of 100 kw. each at Badger and at Baie Verte.

In Prince Edward Island, the Maritime Electric Company added a 10,000-kw. unit at its Charlottetown steam plant.

In Nova Scotia, the Nova Scotia Power Commission continued the construction of two single-unit hydro-electric developments on the Sissiboo River. One of these, with a turbine capacity of 12,000 hp., is located at Weymouth Falls and the other, with a capacity of 8,000 hp., at Sissiboo Falls. Construction difficulties delayed the completion of these two developments, originally planned for 1960, until 1961. The Commission is giving active consideration to the construction of a 10,800-hp. development at Riverdale, also on the Sissiboo River, and a 90,000-hp. development on Wreck Cove Brook. The date of completion of the Nova Scotia Light and Power Company's 7,500-hp. development on the Allain (Lequille) River at Lequille has been moved forward to 1963, as the benefits of a power system interconnection in Nova Scotia and New Brunswick have made completion of this project less urgent. The Company is giving active consideration to a 6,500-hp. development on the Nictaux River at Alpina. In the thermal-electric field, a 20,000-kw. unit was installed at the Nova Scotia Power Commission's steam plant at Trenton.

In New Brunswick, the only activity in the field of hydro-electric construction involved a development on the Monquart River near Bath, which, on completion in 1961, is expected to yield 600 kw. in two units. Construction was continued on the New Brunswick Electric Power Commission's steam plant at East Saint John, where an initial installation of one 50,000-kw. unit is scheduled for completion in mid-1961. Ultimate installation at this plant is expected to reach 250,000 kw.

Quebec.—The total amount of new hydro-electric capacity installed in the province during 1960 surpassed the combined total for all the other provinces. Of Quebec's total of 1,176,500 hp. of new capacity, the Quebec Hydro-Electric Commission contributed more than half. The Commission completed its 855,000-hp. Bersimis II development by installing the last two of a total of five units, each rated at 171,000 hp. The third and last section of the Commission's Beauharnois development was brought nearer completion with the installation of five more 73,700-hp. units. By 1961, this section will consist of ten 73,700-hp. units, with provision for an eleventh. Installation of the eleventh and final unit will raise the installed capacity of the entire Beauharnois development to 2,234,700 hp. Construction of the Commission's Carillon development on the Ottawa River continued on schedule. Ultimate installed capacity at this site will be 840,000 hp. in fourteen units of 60,000 hp. each, the first of which is due to be installed in the fall of 1962 and the remaining units during the 1962-65 period. First details of a major power scheme for the Manicouagan region were announced by the Commission in 1960. This scheme, which will involve the harnessing of the headwaters of the Manicouagan and Outardes Rivers, is expected to provide nearly 6,000,000 hp. of new capacity at new and existing developments on the two rivers. Construction of an 80-mile road to provide access to the site of the proposed reservoir was completed during 1960, and the work of clearing areas to be flooded was commenced. Main features of the Manicouagan scheme will include three generating stations on the Manicouagan River and two others on the Outardes River. An important engineering feature will be a buttressed, multi-arch, concrete dam 4,000 feet long and 650 feet high, one of the highest and most massive of its kind in the world.

The Aluminum Company of Canada completed its giant 1,000,000-hp. Chute des Passes development on the Peribonca River with the installation of the last two units, each rated at 200,000 hp. The Quebec Cartier Mining Company completed its power project on the Hart Jaune River, in the headwaters of the Manicouagan River. The powerhouse, which is operated by remote control, contains three units, each rated at 22,000 hp. L'Office de l'Electrification Rurale started construction of a hydro-electric plant at the mouth of the Magpie River near Magpie Village. The development, consisting of two 1,500-hp. turbines, was scheduled for service in the spring of 1961.

In the field of thermal-electric generation, the Quebec Hydro-Electric Commission completed installation of a 36,000-kw. gas turbine plant near the village of Les Boules, in the Gaspe region of Quebec.

Ontario.—During 1960, the total of 26,500 hp. of new hydro-electric capacity placed in service in Ontario was installed by The Hydro-Electric Power Commission of Ontario, Canada's largest power producing and distributing agency. The new capacity, consisting of a single hydro-electric unit, was brought into operation at Red Rock Falls on the

Mississagi River; a second and final unit is scheduled for service early in 1961. Operation of the plant is controlled from the George W. Rayner station, located 15 miles upstream. Construction progressed rapidly at the Otter Rapids development on the Abitibi River, where two 60,000-hp. units are expected to be installed in the autumn of 1961 and two others in 1963, with provision for four additional units at a later stage. Early in 1960, the Commission announced plans to proceed with construction of three generating stations on the Mattagami River. The first of these, Little Long Generating Station, will consist of two 84,000-hp. units, with provision made for the later addition of two similar units. Initial operation is tentatively scheduled for 1963. At the second, Harmon Generating Station, the initial installation of three 63,000-hp. units is planned for 1965, with provision for the later addition of three units. The third, Kipling Generating Station, will have three 63,000-hp. units in service in 1966, and provision for an ultimate addition of four more units. These three stations, in common with the Otter Rapids Generating Station, will be controlled from the Pinard Transformer Station to be built near the Abitibi River at a point some 23 miles upstream from Otter Rapids.

The Commission proposes to co-ordinate the development of these hydraulic resources with the construction of thermal-electric generating facilities in areas of concentrated load. The plan is to channel the output of a number of the hydraulic developments to a terminal station in the north and thence to load centres in southern parts of the province by means of extra-high-voltage transmission lines, using voltages more than double those at present employed by the Commission. With this purpose in mind, the Commission is conducting tests on an experimental high-voltage line in the vicinity of Coldwater, where conditions associated with the transmission of power at voltages from 400 to 600 kv. are being simulated.

The construction of thermal-electric stations in Ontario was energetically continued. At the Richard L. Hearn Generating Station in Toronto, the Commission installed two steam turbines of 200,000 kw. each. With the placing in service of the final 200,000-kw. unit in 1961, the ultimate installed capacity of 1,200,000 kw. will have been reached. Construction was well advanced on the Lakeview Generating Station near Toronto. One 300,000-kw. unit is scheduled for service in 1961, and three other similar units by 1964. The site of this station is planned to permit a total installation of 1,800,000 kw. At Fort William, construction continued on a steam turbine plant to consist of one 100,000-kw. unit, planned for operation in the latter part of 1961. The site will permit the installation of additional units, if required, to an ultimate capacity of 1,000,000 kw.

The Commission, in conjunction with Atomic Energy of Canada Limited and the Canadian General Electric Company Limited, had under construction, for completion in 1961, a 26,800-hp. Nuclear Power Demonstration Plant near Des Joachims Generating Station on the Ontario side of the Ottawa River. In addition, the Commission entered into an agreement with Atomic Energy of Canada Limited covering participation by both organizations in the development of a 268,000-hp. nuclear-electric generating station, to be located at Douglas Point on Lake Huron, between Kincardine and Port Elgin. Construction work on this project was started, the completion date being planned for 1964 or early in 1965. According to the terms of the agreement, when the Douglas Point station has been demonstrated to be a satisfactory source of power, it will be purchased by the Commission at a price which will permit the production of energy at costs that are competitive with the costs of energy from modern coal-fired stations of similar size.

Prairie Provinces.—In Manitoba, the Manitoba Hydro-Electric Board completed the initial phase of its Kelsey Generating Station on the Nelson River at Grand Rapids with the installation of five units, each rated at 42,000 hp. Provision has been made for the addition of a sixth unit when required. Power from the Kelsey Station will be supplied to the mining project of The International Nickel Company in the Moak, Mystery, and Thompson Lakes area of northern Manitoba. The Board commenced construction of a hydro-electric development on the Saskatchewan River at Grand Rapids, on the west shore of Lake Winnipeg. Initial installation will consist of three 150,000-hp. units; two are scheduled for service late in 1964 and the third is planned for 1965. Construction of the Board's Selkirk Generating Station neared completion; the first of two 66,000-kw. steam units was installed in August and the second should be in operation early in 1961. Transmission and terminal facilities, under construction or proposed for construction, will permit power from developments in the northern parts of the province to be fed into networks serving the southern areas and will also facilitate the existing interconnection between the Provinces of Manitoba and Saskatchewan.

In Saskatchewan, the Consolidated Mining and Smelting Company of Canada doubled the capacity of its Wellington Lake plant on the Charlot River by installing a unit rated at 3,300 hp. Eldorado Mining and Refining Limited proceeded with construction of a single-unit 10,000-hp. hydro-electric development on the Charlot River at Waterloo Lake. The Prairie Farm Rehabilitation Administration continued construction of the South Saskatchewan River Project at the Coteau Creek site. Although the works are being constructed primarily for irrigation purposes, hydro-electric generating facilities will be incorporated at the dam by the Saskatchewan Power Corporation. The initial installation will consist of three units of about 60,000 hp. each, with provision for the later addition of two similar units. The project is scheduled for completion in 1966. The Corporation continued construction of a development in the Tobin Rapids–Squaw Rapids reach of the Saskatchewan River, 35 miles northeast of Nipawin. The development will consist of six units, each rated at 46,000 hp.; installation of four units is planned for 1963 and the remaining two by 1964. A steam unit, rated at 66,000 kw., was added at the Corporation's Boundary Dam plant, raising capacity to 132,000 kw. in two units. The Corporation purchased and took over operation of the 37,500-kw. Moose Jaw plant, formerly owned by the National Light and Power Company, and closed down a number of small plants at Kamsack, Hudson Bay Junction and Weyburn.

In Alberta, Calgary Power Limited completed extensions to its Spray and Rundle plants. Capacity of the Spray plant was doubled by the addition of a 62,000-hp. unit, and capacity of the Rundle plant was increased to 63,000 hp. by the addition of a 40,000-hp. unit. Construction continued on the Company's hydro-electric development on the Brazeau River at Big Bend, about 15 miles upstream from the confluence with the North Saskatchewan River. Installation of a 200,000-hp. unit is scheduled for the autumn of 1964. In addition to a reconnaissance survey being conducted in the Upper Brazeau River basin with a view to locating suitable sites for storage or power dams, Calgary Power Limited is carrying out investigations for a hydro-electric development on the Saskatchewan River at Brazeau Forks, below the confluence with the Brazeau River.

In the thermal-electric field, Calgary Power Limited began installation of a 150,000-kw. steam turbine at its Wabamun plant. Installation of this unit will bring the total capacity of the plant to 282,000 kw. The City of Edmonton increased the capacity of its municipally owned plant to 255,000 kw. in eight units by the addition of a 75,000-kw. steam turbine. The City of Lethbridge added a 10,000-kw. gas turbine at its municipally owned plant, bringing the total installed capacity to 33,375 kw. in five units. Northland Utilities installed a 3,000-kw. gas diesel unit in its Fairview plant, and Canadian Sugar Factories Limited raised the capacity of its Taber steam plant to 3,675 kw. by the addition of a 1,675-kw. unit.

British Columbia.—Hydro-electric construction was active in British Columbia during 1960. A total of 201,220 hp. of new capacity was added, the major part of it by the British Columbia Electric Company Limited, which completed the final phase of its Bridge River development by installing the last two of four identical units, each of 82,000 hp., at its Bridge River No. 2 Powerhouse. The increase in head brought about by completion of the Mission Dam, constructed in conjunction with the No. 2 development, had the effect of raising the total turbine capacity of the Bridge River No. 1 plant from 248,000 hp. to 276,000 hp. The City of Revelstoke completed the initial phase of a hydro-electric development on Cranberry Creek, about 15 miles south of Revelstoke. One unit, rated at 5,800 hp., was installed during the year and a similar unit will be added when required. The Northern British Columbia Power Company Limited doubled the capacity of its Falls River station by the installation of a 6,000-hp. turbine. Bralorne Pioneer Mines Limited reported the loss by fire of two hydro-electric plants located on the Hurley River; capacity of both plants was 2,580 hp. The British Columbia Power Commission had two hydro-electric developments in the planning stage—a 51,500-hp. installation on the Kokish River on Vancouver Island and the Pyramid Mountain–Murtle River development with an expected ultimate capacity of 172,000 hp. in four units. The Commission also had under study a small development of 1,000 hp. on Clayton Creek near Bella Coola.

Negotiations between Canada and the United States led, early in 1961, to the signing of a treaty relating to the development of the Columbia River in Canada. Ratification of the treaty would permit the commencement of work on the development of storage in Canada for the benefit of plants in the United States. Under the terms of the agreement, Canada would receive one-half of the power benefits accruing to the United States from the regulation of 15,500,000 acre-feet of storage, and one-half of the value of the estimated flood damage prevented in the United States through flood control operation of these projects. It is estimated that Canada's initial share of the power benefits will approximate 6,750,000,000 kwh. of annual energy from 1,300,000 kw. of dependable capacity.

In the field of thermal power generation, the British Columbia Electric Company continued construction of a large steam plant designed for an ultimate capacity of six units, each rated at 150,000 kw. The first unit is scheduled for operation early in 1962, the second in 1963, and the third and fourth in the period 1964-66. The fifth and sixth units will be installed when required. British Columbia Power Commission completed installation of a number of new tri-fuel internal combustion units, each rated at 3,000 kw. One of these was installed at the Commission's plant at Dawson Creek, two at Quesnel and three at Prince George; another is expected to be added at Prince George in 1961. Other capacities brought into service at Commission plants during 1960 included 1,100 kw. at Port Hardy, 800 kw. at Burns Lake, 2,100 kw. at Fort Nelson, and 385 kw. at Valemount. A 100-kw. unit was dismantled at Burns Lake. Installations planned for 1961 include 250 kw. at Hazelton, 800 kw. at Chetwynd, 1,200 kw. at Sandspit, and 200 kw. at Bamfield. The Northern Canada Power Commission installed a 100-kw. unit at its diesel plant at Field.

Northwest Territories and Yukon Territory.—The Northern Canada Power Commission completed the installation of a single-unit 9,200-hp. development on the Snare River at Snare Falls, with provision made for the addition of a similar unit when required.

During the year, two diesel generating units with a total capacity of approximately 2,000 kw. were installed at Frobisher Bay. A single 1,000-kw. diesel unit was added at Inuvik and a similar unit at Fort Smith following which two units of 100 kw. and 150 kw., respectively, were removed from service. At Fort Simpson, a 300-kw. unit was installed replacing a smaller unit of 75 kw. The redundant units removed from Fort Smith and Fort Simpson were transferred to Fort Resolution and the three units with a total capacity of 325 kw. are expected to be in operation early in 1961. The installation of a 150-kw. diesel unit at Fort McPherson was completed by the end of 1960.

Section 5.—Ownership and Regulation of Electrical Utilities*

Power is generated in Canada by publicly and privately operated utilities and by industrial establishments. Table 9, p. 576, giving statistics by type of establishment, shows that 51 p.c. of the total electric power generated in 1959 was produced by publicly operated utilities, 28 p.c. by privately operated utilities and 21 p.c. by industrial establishments. However, ownership differs greatly in different areas of the country. Quebec output, for instance, is predominantly from privately owned plants since a large portion of the power development in that province is connected with pulp and paper establishments and with the aluminum industry. In Ontario, on the other hand, almost all electric power is produced by a publicly owned utility, The Hydro-Electric Power Commission of Ontario.

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* Revised by the various provincial commissions or authorities concerned.

Because of the absence of free market determination of prices and regulation of services in an industry that is semi-monopolistic, regulation of electrical utilities has been attempted in most provinces. The governing bodies of the provincial electric power commissions, their functions and activities are summarized in the following paragraphs. Certain privately owned utilities are also covered.

Newfoundland.—There are no publicly owned hydro-electric systems in Newfoundland, although a Commission, known as the Newfoundland Power Commission, was established in 1954 for the purpose of supplying electric power wherever needed throughout the province, particularly to rural areas. The largest water power development in the province is located at Deer Lake. The plant, which is operated by Bowater's Newfoundland Pulp and Paper Company Limited, has a total capacity of 154,000 hp. This Company develops hydro-electric energy at Deer Lake mainly for its own use in the manufacture of pulp and paper, and also supplies electric power to the Buchans Mining Company for mining operations and to the Newfoundland Light and Power Company Limited which distributes electricity to consumers in Corner Brook and adjacent communities in the Bay of Islands sections, to the towns of Grand Falls, Windsor, Bishop's Falls, Botwood and Lewisporte, and to the International Airport at Gander and the Township of Gander nearby. The Company, in addition to its eight hydro plants, operates two steam generating plants at St. John's, having a total capacity of 30,000 kw.

The United Towns Electric Company Limited operates nine hydro plants and two diesel plants, the latter located on the Burin Peninsula. A subsidiary, the West Coast Power Company, operates a diesel generator at Port aux Basques and a hydro plant at Lookout Brook. The Union Electric Light and Power Company operates plants at Clarenville, Port Union and Trinity.

Power plant construction completed or under way in Newfoundland during 1960 is outlined at p. 578.

Prince Edward Island.—The area of Prince Edward Island is only 2,184 sq. miles and approximately 70 p.c. of its population lives in rural areas. Consequently, electric power must be supplied to rather thickly populated rural districts interspersed with a considerable number of small municipalities. There is little opportunity for the development of hydro-electric power in the province, since rivers are short, drainage areas small, and the country is relatively flat. Therefore, power is generated mainly in thermal and diesel plants using imported fuels.

The Maritime Electric Company Limited supplies 65,631,420 kwh. of the Island's power consumption of 71,439,038 kwh. with a system peak of 15,700 kw. from its Charlottetown plant. The plant consists of six steam turbines of 22,365-kw. capacity. In 1959, the Company served 12,857 rural and urban customers over approximately 850 miles of Company-owned distribution line, with an additional 3,378 customers being served over 714 miles of distribution line owned by the provincial government and connected with the Company system. In addition, the Company supplies 6,175,783 kwh. of energy annually to the Town of Summerside Electric Light Department through a 33-kv. transmission line interconnecting the two systems at Summerside.

Two other power systems supply the remainder of the power consumed in the province. The Town of Summerside Electric Light Department operates a station in Summerside which is powered by nine diesel engines with a total capacity of 2,835 kw. and has an annual energy production of 5,415,960 kwh. This system serves 2,324 customers within the corporate limits of the town and 925 customers over 76 miles of rural lines, plus an additional 325 rural customers over 66 miles of line owned by the provincial government. The Summerside station also supplies 918,600 kwh. of energy annually to the Scales Hydro-Electric Company Limited. The Scales Hydro-Electric Company Limited operates a small station in Freetown on the Dunk River. Its total capacity is 250 kw., 175 kw. of which is generated by water power and the remainder by diesel engines. The annual energy production is 391,658 kwh., and 727 customers in surrounding areas are served by 29 miles of distribution line.

Nova Scotia.—The Nova Scotia Power Commission was created under the Power Commission Act of 1919 with the function of supplying electric power and energy by the most economical means available. The Rural Electrification Act of 1937 greatly increased the possibilities for retail service by providing financial assistance to equalize cost and revenue of extensions approved by the Governor in Council. In 1941 an amendment to the Power Commission Act authorized the Commission, subject to the approval of the Governor in Council, to regulate and control the generation, transmission, distribution, supply and use of power in the province. Certain investigatory work is carried on in the province by the Federal Government in close association with the Commission, but the control of water resources is vested in the Crown and administered under the provisions of the Nova Scotia Water Act, 1919. The Commission pays regular fees for water rights.

Financially, the Commission is self-supporting, repaying borrowings from revenue. The balance sheet at Nov. 30, 1959 showed total fixed assets of $57,508,716 including work in progress amounting to $10,481,501. Current assets amounted to $1,037,495 and liabilities were as follows: fixed $42,224,276; current $4,154,261; contingency and renewal reserves $5,159,002; sinking fund reserves $9,351,697; and general and special reserves $2,122,738.

The initial development of the Commission was an 800-hp. installation on the Mushamush River which went into operation in 1921 and delivered 208,752 kwh. in the first complete year of operation. Succeeding years showed a marked growth in installed capacity, which at Nov. 30, 1959 reached 112,550 hp. in hydraulic turbines, 960 kw. in diesel units and 60,000 kw. in steam turbines.

The territory of the Commission extends over the entire province and embraces six systems which include 22 generating stations and more than 4,500 miles of transmission and distribution lines through which wholesale and retail customers received 539,321,786 kwh. during the year ended Nov. 30, 1959. Power plant construction completed or under way in Nova Scotia during 1960 is outlined at pp. 578-579.

13.—Capacity and Output of the Nova Scotia Power Commission, Year Ended Nov. 30, 1959

System[1] and First Year of Operation	Present Installed Capacity	Output
	kw.	kwh.
Western Network—		
Harmony (1943)	600	4,425,900
Roseway (1930)	888	3,949,805
Gulch (1952)	6,000	29,266,046
Ridge (1957)	4,000	12,088,800
Portable (diesel)	200	17,315
Eastern Network—		
Barrie Brook (1940)	360	2,718,600
Dickie Brook (1948)	3,800	10,102,400
Malay Falls (1924)	3,600	12,615,410
Ruth Falls (1925)	6,970	36,799,820
Liscomb (1957)	450	2,556,742
Trenton (thermal) (1951)	60,000	110,433,300
St. Margaret (1921)	10,400	32,037,200
Mersey—		
Original development (1928)	21,780	142,469,200
Cowie Falls (1938)	7,200	47,825,000
Deep Brook (1950)	9,000	54,331,800
Lower Great Brook (1955)	4,500	23,868,320
Canseau (diesel) (1937)	970	1,766,576
Tusket (1929)	2,160	15,577,578
Totals	**142,878**	**542,849,812**

[1] Hydro unless otherwise noted.

New Brunswick.—The New Brunswick Electric Power Commission was incorporated under the Electric Power Act, 1920. Generating stations owned by the Commission at Mar. 31, 1960 were as follows:—

Plant	*Type*	*Capacity*	*Plant*	*Type*	*Capacity*
		hp.			hp.
Grand Falls	Hydro	84,500	Saint John	Steam	21,500[1]
Musquash	Hydro	9,320	Chatham	Steam	43,600[1]
Tobique	Hydro	27,000	Grand Manan	Diesel	1,140[1]
Beechwood	Hydro	96,500	Campobello	Diesel	320[1]
Milltown	Hydro	3,600			
Grand Lake	Steam	58,700[1]	Total Capacity		346,180

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[1] Capacity rating of generators in kw. converted to hp.

All the above generating units with the exception of Grand Manan were interconnected in a province-wide grid system. The statistical information given in Table **14** shows the growth of the Commission's undertakings since 1956.

14.—Growth of the New Brunswick Electric Power Commission, Years Ended Mar. 31, 1956-60

Item		1956	1957	1958	1959	1960
High-voltage transmission line	miles	1,071	1,121	1,228	1,272	1,396
Distribution line	"	6,937	7,100	7,168	7,286	7,512
Direct customers	No.	69,415	76,490	79,550	84,025	100,475
Plant capacities	hp.	140,570	166,250	256,720	256,720	346,180
Power generated	kwh.	493,609,040	606,443,490	653,331,610	754,714,180	1,184,798,350
Capital invested	$	71,140,250	90,152,808	100,390,025	104,511,683	132,844,276
Revenue	$	9,635,272	11,286,117	12,182,120	13,527,290	16,665,153

Power plant construction completed or under way in New Brunswick during 1960 is outlined at p. 579.

Quebec.—*The Quebec Streams Commission.*—Created by SQ 1910, c. 5, and given additional powers in 1912 (RSQ 1925, c. 46) and SQ 1930, c. 34, the Quebec Streams Commission was authorized to ascertain the water resources of the province, to make recommendations regarding their control, and to construct and operate certain storage dams to regulate the flow of streams. It assisted companies engaged in such work by the systematic collection of data on the flow of the principal rivers and on meteorological conditions, by investigation of numerous water power sites and by the determination of the longitudinal profile of a large number of rivers.

On Apr. 1, 1955, the Quebec Streams Commission was abolished and its powers and attributions transferred to the provincial Hydraulic Resources Department. The rivers controlled by the Commission at the time of transfer, either by means of dams on the rivers or by regulating the outflow of lakes at the headwaters, were: the St. Maurice, the Gatineau, the Lièvre, the St. Francis, the Chicoutimi, the Au Sable, and the Métis. The Commission also operated nine reservoirs on North River, two in the watershed of the Ste. Anne de Beaupré River, and one at the outlet of Lake Morin on Rivière du Loup (lower).

Other Reservoir Control.—Storage reservoirs otherwise controlled or operated are: the Lake St. John, the Lake Manouane and Passe Dangereuse on the Peribonca River, and the Onatchiway on the Shipshaw River; Témiscouata Lake on the Madawaska River, controlled by the Gatineau Power Company; Memphremagog Lake on the Magog River, controlled by the Dominion Textile Company; Témiscamingue and Quinze Lakes on the Ottawa River, controlled by the federal Department of Public Works; Kipawa Lake on the Ottawa River, controlled by the Gatineau Power Company; and Dozois Lake on the upper Ottawa River and Pipmaukin Lake in the Bersimis River watershed, controlled by the Quebec Hydro-Electric Commission.

Power developments on the Saguenay River, benefiting from the Peribonca and Lake St. John reservoirs, have a total capacity of 1,950,000 hp.

The Quebec Hydro-Electric Commission.—The Quebec Hydro-Electric Commission was established by SQ 1944, c. 22, with the object of supplying power to the municipalities, to industrial and commercial undertakings and to citizens of the Province of Quebec at the lowest rates consistent with sound financial administration. The Commission at the end of 1960 controlled, among other assets, the following hydro-electric plants:*—

Plant	*River*	*Installed Capacity*
		hp.
Cedars	St. Lawrence	217,000
Sault au Recollet	Rivière des Prairies	60,000
Beauharnois	St. Lawrence	1,957,000
Rapid VII	Upper Ottawa	64,000
Rapid II	Upper Ottawa	48,000
Bersimis No. 1	Bersimis	1,200,000
Bersimis No. 2	Bersimis	875,000
	TOTAL CAPACITY	4,421,000

The Commission operates a public utility system which supplies the electric light and power requirements of Metropolitan Montreal and surrounding districts, embracing a population of nearly 2,000,000. From the Cedars plant, electric energy is supplied to the Aluminum Company of America at Massena, N.Y., and through the Beauharnois Light, Heat and Power Company power is sold to The Hydro-Electric Power Commission of Ontario. Sales involved are in the neighbourhood of 100,000 hp. to Massena, N.Y., and 250,000 hp. to Ontario.

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* The Commission also purchases 135,000 hp. from the Shawinigan Water and Power Company.

15.—Growth of the Quebec Hydro System, 1951-60

NOTE.—Figures for the years 1935-46 will be found in the 1950 Year Book, p. 572, and for the years 1947-50 in the 1957-58 edition, p. 579.

Year	Municipalities Served	Customers Served (end of year)	Power Distributed	
			Total	Primary
	No.	No.	hp.	hp.
1951	66	380,171	1,312,000	1,312,000
1952	67	395,066	1,620,000	1,462,000
1953	67	413,439	1,748,000	1,625,000
1954	67	430,774	1,700,000	1,687,000
1955	65	451,820	1,760,000	1,725,000
1956	65	475,499	2,061,000	1,955,000
1957	64	499,005	2,561,000	2,390,000
1958	64	521,279	2,736,000	2,671,000
1959	63	542,028	3,392,000	2,926,000
1960	63	567,621	3,582,000	3,174,000

16.—Distribution of Quebec Hydro Primary Power, by Customer Group, 1954-60

(Coincident with Montreal System peak)

System	1954	1955	1956	1957	1958	1959	1960
	hp.	hp.	hp.	hp.	hp.	hp.	hp.
Montreal	1,117,000	1,230,000	1,351,000	1,436,000	1,617,000	1,698,000	1,905,000
Beauharnois (local)	154,000	106,000	138,000	265,000	253,000	255,000	208,000
Beauharnois (hydro)	250,000	250,000	250,000	250,000	267,000	261,000	261,000
Massena	75,000	75,000	75,000	75,000	75,000	75,000	75,000
Shawinigan Water and Power Company	40,000	40,000	100,000	198,000	276,000	359,000	452,000
Gatineau	—	—	20,000	30,000	37,000	50,000	67,000
Gaspe	—	—	—	35,000	41,000	48,000	51,000
Northwestern	—	—	—	86,000	86,000	85,000	53,000
Chibougamau	—	—	—	15,000	19,000	25,000	25,000
Northeastern (local)	—	—	—	—	—	70,000	77,000
Totals	**1,636,000**	**1,701,000**	**1,944,000**	**2,390,000**	**2,671,000**	**2,926,000**	**3,174,000**

The Commission delivers some 50,000 hp. on the south shore of the St. Lawrence River in the Gaspe area—power from its Bersimis plants transmitted across the river through a 69-kv. submarine cable, over a distance of 34 miles. The Commission also purchases about 25,000 hp. from the Saguenay Transmission Company for delivery to mining companies in the Chibougamau area. The recently completed Lac Ste. Anne reservoir on the Toulnustouc River controls the flow of the Lower Manicouagan River.

Power plant construction completed or under way in Quebec during 1960 is outlined at p. 579.

Ontario.—The Hydro-Electric Power Commission of Ontario is a corporate entity, a self-sustaining public enterprise endowed with broad powers with respect to the supply of electricity throughout the Province of Ontario. Its authority is derived from an Act of the Provincial Legislature passed in 1906 to give effect to recommendations of earlier advisory commissions that the water powers of Ontario should be conserved and developed for the benefit of the people of the province. It now operates under the Power Commission Act (SO 1907, c. 19) passed in 1907 as an amplification of the Act of 1906 and subsequently modified from time to time (RSO 1960, c. 300, as amended). The Commission may have from three to six members, all of whom are appointed by the Lieutenant-Governor in Council. One commissioner must be, and a second commissioner may be, a member of the Executive Council of the Province of Ontario.

The basic principle governing the financial operations of the Commission and its associated municipal utilities is that electrical service is provided at cost. The Commission interprets cost as including payments for power purchased, charges for operating and maintaining the power systems, and related fixed charges. The fixed charges represent interest on debt, provisions for depreciation, allocations to reserves for contingencies and rate stabilization, and the further provision of a sinking fund reserve for retiring the Commission's capital debt. While the enterprise from its inception has been self-sustaining, the province guarantees the payment of principal and interest on all bonds issued by the Commission and held by the public. In addition, over a period of nearly forty years the province has materially assisted the development of agriculture by contributing half the capital cost of rural distribution facilities.

For the financial and administrative purposes of the Commission, the province is divided into two parts. The roughly triangular part lying south of Lake Nipissing and the French and Mattawa Rivers is served by the Southern Ontario System, a fully integrated power system combining the Niagara, Georgian Bay, and Eastern Ontario Divisions. The System is operated on a co-operative basis predominantly for the benefit of more than 300 municipal electrical utilities supplied with power at cost but in part also for the benefit of the Rural Power District which it serves. The northern part of the province is served by the Northern Ontario Properties, held and operated for the most part in trust for the province, but operated in part also for the benefit of a group of utilities supplied with power at cost. The Northern Ontario Properties include a Northeastern and a Northwestern Division. Each of these two Divisions is an integrated power system, the former being interconnected with the Southern Ontario System.

In addition to administering the enterprise over which it has direct control, the Commission exercises certain regulatory functions with respect to the group of municipal electrical utilities which it serves. In order to provide convenient and expeditious service in this dual function of regulation and supply, the Commission has subdivided its province-wide operations into nine regions, seven in the south and two in the north, with regional offices located in nine major municipalities. At present the two northern regions coincide with the two northern divisions.

The Commission is concerned primarily with the provision of electric power by generation or purchase and its delivery in bulk either for resale or for use in the industrial operations of certain customers served directly. Power for resale is delivered to the associated municipal electrical utilities, and to certain interconnected systems, including a number of independent municipal distribution systems, operating within or beyond the provincial boundaries. The industrial customers served directly include mines and industries in unorganized areas. Some power users located within areas served by the municipal utilities are also served by the Commission since their power requirements may be so large, or may create supply conditions so unusual, as to make service by the local municipal utilities impracticable. In total, bulk delivery for resale and for industrial use accounts for about 90 p.c. of the Commission's energy sales. The remaining 10 p.c. of the Commission's sales are made to ultimate customers either in rural areas served on behalf of the townships by the Commission's rural distribution facilities, or in a relatively small group of municipalities served by Commission-owned local distribution systems. In general, however, retail service to ultimate customers in most cities and towns, in many villages, and in certain populous township areas is supplied by the associated electrical utilities, owned and operated by local commissions and functioning under the general supervision of The Hydro-Electric Power Commission of Ontario as provided for in the Power Commission Act and the Public Utilities Act.

The Commission's power development program as at Dec. 31, 1960 is given in Table 17. Hydro, thermal and nuclear power plant construction completed or under way in Ontario during 1960 is outlined at pp. 579-580.

17.—Current Power Development Program of The Hydro-Electric Power Commission of Ontario, as at Dec. 31, 1960

System and Development	Units	In Service	Capacity[1]
	No.		kw.
Southern Ontario System—			
Richard L. Hearn—Toronto	8	1951-61	1,200,000*
Nuclear Power Demonstration—near Des Joachims Generating Station	1	1961	20,000*
Lakeview—near Toronto	4	1961-64	1,200,000*
Douglas Point Nuclear Power—near Kincardine	1	1964	200,000*
Northern Ontario Properties—			
Northeastern Division—			
Red Rock Falls—Mississagi River	2	1960-61	40,000
Otter Rapids—Abitibi River	4	1961-63	172,000
Little Long—Mattagami River	2	1963	114,000
Harmon—Mattagami River	3	1965	110,000
Kipling—Mattagami River	3	1966	132,000
Northwestern Division—			
Thunder Bay—Fort William	1	1961	100,000*

[1] Capacities quoted are dependable at time of system peak except those marked with an asterisk (*), which are installed capacities.

18.—Resources of The Hydro-Electric Power Commission of Ontario Generated and Purchased (All Systems), December 1958-60

Year and System	Commission's Generating Stations				Power Purchased	
	Hydro-electric[1]		Thermal-electric[1]			
	kw.	hp.	kw.	hp.	kw.	hp.
December 1958—						
Southern Ontario System	3,722,400	4,989,812	616,000	825,737	592,000	793,566
Northern Ontario Properties—						
Northeastern Division	297,400	398,660	1,800	2,413	1,200	1,609
Northwestern Division	528,600	708,579	—	—	1,700	2,279
Totals	**4,548,400**	**6,097,051**	**617,800**	**828,150**	**594,900**	**797,454**
December 1959—						
Southern Ontario System	3,979,700	5,334,718	616,000	825,737	618,000	828,418
Northern Ontario Properties—						
Northeastern Division	342,400	458,981	1,800	2,413	1,200	1,609
Northwestern Division	593,900	796,112	—	—	1,700	2,279
Totals	**4,916,000**	**6,589,811**	**617,800**	**828,150**	**620,900**	**832,306**
December 1960—						
Southern Ontario System	3,948,750	5,293,230	994,000	1,332,440	616,000	825,737
Northern Ontario Properties—						
Northeastern Division	368,400	493,834	1,900	2,547	1,200	1,609
Northwestern Division	593,900	796,113	—	—	2,000	2,681
Totals	**4,911,050**	**6,583,177**	**995,900**	**1,334,987**	**619,200**	**830,027**

[1] Dependable peak capacity—the amount of power which resources can be expected to supply at the time of the system primary peak requirements, assuming that all units are available and that the supply of water is normal. This capacity will vary from time to time in accordance with changing conditions. The capacity of a source of purchased power is based on the terms of the purchase contract.

19.—Distribution of Power to Systems of The Hydro-Electric Power Commission of Ontario, Years Ended Dec. 31, 1955-60

NOTE.—Peak load generated and purchased, primary and secondary, in terms of generation.

System	1955	1956	1957	1958	1959	1960
	kw.	kw.	kw.	kw.	kw.	kw.
Southern Ontario System	3,740,760	4,160,925	4,104,579	4,459,367	4,913,941	5,031,545
Northern Ontario Properties—						
Northeastern Division	366,458	391,442	459,117	469,048	550,067	551,661
Northwestern Division	329,122	356,737	406,880	489,121	554,196	574,328
Totals	**4,436,340**	**4,909,104**	**4,970,576**	**5,417,536**	**6,018,204**	**6,157,534**

20.—Growth of The Hydro-Electric Power Commission of Ontario, 1951-60

Year	Communities Served	Ultimate Customers Served Directly or Indirectly	Total Power Distributed[1]	Assets of Commission and Municipal Utilities
	No.	No.	kw.	$
1951	1,175	1,249,366	2,945,990	1,261,739,406
1952	1,244	1,317,249	3,330,286	1,442,511,467
1953	1,279	1,389,750	3,480,646	1,687,947,082
1954	1,301	1,467,034	3,778,744	1,883,311,970
1955	1,325	1,540,011	4,436,340	2,040,174,745
1956	1,340	1,612,049	4,909,104	2,293,492,487
1957	1,376	1,674,062	4,970,576	2,563,058,384
1958	1,387	1,757,405	5,417,536	2,756,758,142
1959	1,405	1,830,453	6,018,204	2,909,088,086
1960	1,425p	1,881,472	6,157,534	3,044,800,819

[1] Sum of the maximum 20-minute coincident peak loads (primary plus secondary) of each of the systems operated by the Commission, given in terms of net output of the sources of supply to each system for the last month of each fiscal year.

During 1960, the Commission's investment in fixed assets at cost increased by $112,578,417 and at the end of the year amounted to $2,360,850,796. Total assets after deducting accumulated depreciation were $2,660,258,018.

In 1960, a total of 354 municipal utilities engaged in the retail distribution of electricity purchased power from the Commission under cost or fixed-rate contracts. The total assets of these utilities, after deducting accumulated depreciation, amounted to $645,644,451, of which $261,101,650 represented the equity acquired in the Commission's systems by the utilities operating under cost contracts.

Manitoba.—The Manitoba Power Commission came into being in 1919 by Act of the Provincial Legislature and was charged with the responsibility of distributing electric energy to most of the province with the exception of the Metropolitan Winnipeg area. The distribution facilities of the suburban areas adjacent to the city of Winnipeg proper were acquired in 1955. The Commission acted as a distributing agency only, purchasing energy in bulk from The Manitoba Hydro-Electric Board. It served 532 cities, towns and villages and more than 42,500 farms through its 32,000 miles of transmission line. In 1958, the Commission moved into the northern section of the province by acquiring the distribution and generating facilities at The Pas. This northern expansion continued during 1959 and 1960 with Cranberry Portage, Thompson and the seaport of Churchill added to the group of communities served. By a special Act of the Legislature passed in March 1961, The Manitoba Power Commission was amalgamated with the provincial generation authority, The Manitoba Hydro-Electric Board, to form one new utility known as Manitoba Hydro.

Plant additions completed or under way in Manitoba during 1960 are outlined at pp. 580-581.

Saskatchewan.—The Saskatchewan Power Corporation was established on Feb. 1, 1949 and now operates under the provisions of the Power Corporation Act (SS 1950, c. 10) as amended. It succeeded the Saskatchewan Power Commission which had operated from Feb. 11, 1929. The original functions of the Corporation included the generation, transmission, distribution, sale and supply of hydro and steam electric energy. Since 1952, the Corporation has been authorized to produce or purchase, and to transmit, distribute, sell and supply natural or manufactured gas.

In 1959, the Corporation served 957 urban communities (with six or more customers) in retail sales, and served the cities of Saskatoon, Swift Current and Weyburn, the town of Battleford and the hamlet of Waskesiu in bulk sales. Some bulk power was also sold to the city of Regina on an exchange basis. Activities of the Corporation cover the entire province with the exception of the city of Regina, which owns and operates municipal plants and a distribution system, and the city of Moose Jaw where the local plant and distribution system is owned and operated by National Light and Power Company Limited. Late in 1959, the distribution system and generating facilities of the city of Weyburn were purchased and added to the Corporation system.

At the end of 1959, the Corporation served 197,451 customers, 162,443 of whom were retail customers and 35,008 of whom were located in communities supplied with power through bulk sales. The retail customers included 107,322 urban customers, and 55,121 customers classified as rural, predominantly farmers. During the year, all customers used 1,067,349,615 kwh., of which 1,048,261,376 kwh. were generated in Corporation plants and 19,088,239 kwh. were bought in bulk from Regina, the National Light and Power Company Limited, and the Northern Power Company. At the end of the year, the Saskatchewan Power Corporation had invested at cost a total of $269,175,839 in electric and natural gas plant in service.

During 1959, the Corporation owned and operated five steam generating plants, one at Prince Albert and two each at Saskatoon and Estevan. These plants supplied 82 p.c. of total system power requirements. Three internal combustion gas and dual fuel plants at Kindersley, Swift Current and Unity supplied most of the remainder. Five small diesel plants (at Leader, Central Butte, Kamsack, Hudson Bay and La Ronge) acted mainly as standby plants. Total system capability in operation at the end of 1959 was assessed at 447,110 kw. with 398,000 kw. located in steam plants, 46,000 kw. in gas and dual fuel units and 3,110 kw. in diesel plants.

By the end of 1959, the Corporation owned and operated 63,514 miles of transmission and rural lines (excluding urban distribution and hi-lines).

Plant additions completed or under way in Saskatchewan during 1960 are outlined at p. 581.

21.—Growth of the Saskatchewan Power Corporation, 1950-59

Year	Communities Served in Bulk and Retail Sales	Individual Meters in Communities Served	Power Distributed	Revenue
	No.	No.	kwh.	$
1950	454	84,361	235,926,656	6,363,597
1951	535	93,923	278,826,919	7,159,876
1952	582	107,942	332,674,176	8,553,619
1953	631	122,676	398,211,673	10,363,752
1954	664	134,587	472,763,014	11,936,234
1955	742	149,134	556,776,981	13,350,177
1956	799	162,594	659,720,877	15,566,910
1957	870	178,567	780,613,534	18,152,460
1958	880	188,293	909,086,629	20,687,771
1959	962	197,451	1,067,349,615	23,909,113

Alberta.—Public ownership of power generating and distributing systems in Alberta is confined to certain urban municipalities. The regulatory authority over privately owned systems is the Board of Public Utility Commissioners which has jurisdiction over the distribution and sale of electricity. The Board has power to hold investigation upon complaint made either by a municipality or by a utility company and, following such investigation, may fix just and reasonable rates.

There are three private utility services in the province—Calgary Power Limited, Canadian Utilities Limited, and Northland Utilities Limited. A synopsis of these services is given below; plant additions completed or under way in Alberta during 1960 are outlined at p. 581.

Calgary Power Limited.—This Company has 11 hydro generating plants on the Bow River and its tributaries, west of Calgary: Horseshoe Falls, Kananaskis Falls, Ghost River, Cascade, Barrier, Spray, Rundle, Three Sisters, Bearspaw, Pocaterra, and Interlakes. The Company also operates a steam plant of 176,000 hp. at Wabamun, west of Edmonton. At Dec. 31, 1960, the Company's total plant capacity was 587,450 hp. All the hydro plants except Bearspaw are operated by remote control from the Kananaskis Falls plant.

The Company has five reservoirs on the Bow River and its tributaries:—

Lake Minnewanka	180,000 acre-feet
Interlakes (Upper Kananaskis Lake)	100,000 acre-feet
Pocaterra (Lower Kananaskis Lake)	53,000 acre-feet
Spray Lakes	210,000 acre-feet
Ghost	75,000 acre-feet

An agreement with the City of Medicine Hat provides an additional 33,500 hp. to the Company from the city's steam plant. Power from these plants is fed into a transmission network which supplies the entire electricity requirements of the cities of Calgary, Red Deer, Wetaskiwin and Camrose, about 450 towns, villages and hamlets, and a substantial industrial load in central and southern Alberta. This transmission network is also connected with the municipal utilities of the cities of Edmonton and Lethbridge, Canadian Utilities Limited at Drumheller, Vegreville and Vermilion, and the East Kootenay Power Company in the Crowsnest Pass.

The Company has about 5,001 miles of main transmission lines and 3,522 miles of distribution lines extending from Judy Creek and Plamondon in the north to Milk River and Waterton in the south, and from Chauvin, Macklin (Sask.), Hilda and Walsh in the east to Hinton, Nordegg, Banff and Crowsnest Pass in the west. The cities of Calgary and Red Deer and the towns of Ponoka, Fort Macleod and Cardston are supplied on a wholesale basis, but all other points on the same system are supplied on a retail basis. At Dec. 31, 1960, electric pumping service was being supplied to more than 4,100 oil wells, as well as direct service to such other sectors of the oil industry as gathering stations, refineries and pipeline pumping. Several industrial plants near Edmonton were also served.

An extensive farm electrification program is in progress in Alberta and at Dec. 31, 1960 the Company was serving 37,114 farms. Calgary Power constructs, operates and provides for the engineering of these co-operatives through a non-profit subsidiary (Farm Electric Services Limited) and energy is supplied to the farm co-operative consumers at cost.

Canadian Utilities, Limited.—This company, with head office at Edmonton, supplies three major areas in the province, covering 35,000 sq. miles: the Grande Prairie District, outlined by the British Columbia border, Hythe, Spirit River, Lesser Slave Lake, Smith, Swan Hills, Fox Creek and the city of Grande Prairie; the Vegreville District, outlined by Vegreville, Smoky Lake, Cold Lake, the Saskatchewan border, the city of Lloydminster and the town of Vermilion; and the Drumheller District, outlined by Three Hills, Stettler, Forestburg, Consort, the Saskatchewan border, Empress, the Red Deer River, Cessford and the city of Drumheller.

Three interconnected plants supply the Grande Prairie District: a 1,300-kw. natural-gas diesel unit at the Fairview plant, several diesel and gas diesel units totalling 5,800 kw. at the Grande Prairie plant, and a 10,000-kw. gas turbine, which burns sour flare-gas from nearby oilfields, at the Sturgeon plant. In addition, an 8,500-kw. gas turbine is being moved from Vermilion to the Sturgeon plant in 1961; and two tie-lines with Northland Utilities are used by the two companies to serve the Peace River–Grande Prairie area. Three interconnected plants supply the Vegreville and Drumheller Districts: a 32,000-kw. coal-fired steam unit at the Battle River plant, three coal-fired turbines totalling 19,000 kw. at the Drumheller plant, and four gas-fired steam turbines totalling 9,000 kw. at the Vermilion plant, where a new 30,000-kw. gas turbine is being installed in 1961. Tie-lines with Calgary Power are used by both companies for interchange of power. Smaller isolated diesel plants totalling 815 kw. supply Fort Chipewyan, Smith, Anzac and Simonette in Alberta and Hudson Hope in British Columbia.

At Dec. 31, 1960, the company served 43,721 customers in 246 communities, and 138 rural electrification associations, through a network of 3,982 miles of transmission and distribution lines and 10,940 miles of rural electrification association lines. Since 1949, more than 11,700 farms have been electrified on a co-operative basis, whereby the rural electrification association systems are constructed and operated at cost for the farmers. The company supplies electrical service to more than 1,500 oil wells, batteries and pipeline pumping stations, as well as to various gas processing plants, oil refineries, coal mines, lumber mills and other industries.

The company's three subsidiaries are: McMurray Light and Power Company Limited, with a 475-kw. diesel plant serving 334 customers; and the Yukon Hydro Company Limited and the Yukon Electrical Company Limited, which together serve 1,814 customers in Whitehorse, Haines Junction, Watson Lake, Carcross and Carmacks in the Yukon Territory, using a total of 1,650 kw. in hydro units, 1,920 kw. in diesel units, and a tie-line from the Northern Canada Power Commission's 15,000-hp. hydro plant near Whitehorse.

Northland Utilities Limited.—This company, with headquarters at Edmonton, supplies electrical service to 10,000 customers located in 33 communities. Diesel or gas-fuelled generating plants are located in Jasper, Athabasca, High Prairie, Fort Vermilion, McLennan, Peace River, Fairview and Lac la Biche in Alberta, and at Hay River in the Northwest Territories. A hydro-electric generating plant augments the supply at Jasper. Through 175 miles of 69,000-volt transmission line and 250 miles of 24,000-volt transmission line, service is distributed to 27 additional communities and approximately 2,300 farm customers are served by rural co-operative lines. A subsidiary, Uranium City Power Company Limited, generates and distributes electricity to 500 customers in Uranium City, Sask.

Northland Utilities supplies 5,100 customers with natural gas in 15 communities in northern Alberta—Fairview, Bluesky, Whitelaw, Brownvale, Berwyn, Grimshaw, Grande Prairie, Spirit River, Sexsmith, Rycroft, Woking, Clairmont, Peace River, High Prairie and Jasper. A subsidiary, Northland Utilities (B.C.) Limited, supplies gas to over 3,000 customers in Dawson Creek and Pouce Coupe, B.C.

British Columbia.—The British Columbia Power Commission was appointed in April 1945 under the provisions of the Provincial Electric Power Act. Operations were commenced in August of the same year with the acquisition of electrical properties in several parts of the province. The following statement shows the growth in the number of customers from 1951 to 1960:—

Year Ended Mar. 31—	*Services Acquired*	*Services Installed*	*Total Services for Period*	*Cumulative Services to End of Period*
	No.	No.	No.	No.
1951	473	4,075	4,548	44,174
1952	103	2,600	2,703	45,912
Sold June 1951	−325	−640	−965	
1953	—	3,597	3,597	49,509
1954	—	3,264	3,264	52,773
1955	523	3,261	3,784	56,557
1956	406	4,382	4,788	61,345
1957	4,676	5,525	10,201	69,574
Sold May 1956	−337	−1,635	−1,972	
1958	—	5,706	5,706	75,280
1959	75	4,506	4,581	79,861
1960	119	4,324	4,443	84,304
CUMULATIVE TOTALS	32,651	51,653	84,304	84,304

Details of construction completed or under way in British Columbia during 1960 are outlined at pp. 581-582.

22.—Growth of the British Columbia Power Commission, Years Ended Mar. 31, 1956-60

Item	1956	1957	1958	1959	1960
Customers..................... No.	61,345	69,574	75,280	79,861	84,304
Installed plant capacity........... kw.	211,366	284,435	324,735	385,771	454,191
Circuit Miles of Line—					
Transmission (high voltage)....miles	795	1,009	1,330	1,415	1,578
Distribution primaries.......... "	3,781	4,147	4,650	4,949	5,227
Power Requirements—					
Generated.....................kwh.	955,007,458	1,058,915,734	984,810,523	1,597,961,498	1,707,027,382
Purchased...................... "	24,023,708	25,668,700	228,760,010	46,124,718	51,418,578
Totals, Power Requirements. kwh.	**979,031,166**	**1,084,584,434**	**1,213,570,533**	**1,644,086,216**	**1,758,445,960**
Annual revenue..................$'000	9,731	11,992	14,524	17,131	19,078
Capital Investment (plant in operation)—					
Generation plant.............. $	44,741,367	55,595,538	82,844,306	115,743,698	141,075,465
Transmission plant............ $	15,289,408	20,639,658	24,678,764	28,487,058	32,202,571
Distribution and general plants. $	21,791,399	25,783,408	30,031,507	32,724,097	36,017,392
Totals, Capital Investment (plant in operation)........ $	**81,822,174**	**102,018,604**	**137,554,577**	**176,954,853**	**209,295,428**

Sources of power for the year ended Mar. 31, 1960 were as follows:—

Source	*Power*	*Percentage of Total*
	kwh.	
Hydro-electric plant..	1,524,109,250	86.6
Diesel-electric plant—		
Oil fuel..	50,109,918	2.8
Gas fuel..	131,296,214	7.5
Gas-turbine plant...	1,512,000	0.1
Purchased...	51,418,578	3.0
TOTALS..	1,758,445,960	100.0

Northwest Territories and Yukon Territory.—The Northern Canada Power Commission, formerly Northwest Territories Power Commission, was created by Act of Parliament in 1948 to bring electric power to points in the Northwest Territories where a need developed and where power could be provided on a self-sustaining basis. By legislation passed in 1950, the Act was extended to include Yukon Territory. The Commission has authority to construct and operate power plants as required in the Territories and, subject to approval of the Governor in Council, in any other parts of Canada.

The Commission has hydro-electric power developments on the Yukon River near Whitehorse, Y.T., the Mayo River near Mayo Landing, Y.T., and the Snare River northwest of Yellowknife, N.W.T. Diesel-electric plants are operated at Fort Simpson, Fort Smith, Fort Resolution, Frobisher Bay and Inuvik, N.W.T., and at Field, B.C.

The Whitehorse Rapids power development, which has been in service since November 1958, supplies the power for the Department of National Defence at Whitehorse, most of the power for the city of Whitehorse, and the power for heating systems of the Department of National Health and Welfare Hospital and two hostels operated by the Department of Citizenship and Immigration.

The Snare River hydro developments supply power to the mines in the Yellowknife area and, with the Bluefish hydro-electric plant of the Consolidated Mining and Smelting Company of Canada Limited, supply the town of Yellowknife. The original Snare Rapids plant has been in operation since September 1948 and the Snare Falls plant, situated on the same river about 10 miles downstream from the original plant and remotely controlled from Snare Rapids, was placed in service in November 1960.

The Mayo River plant, completed in November 1952, supplies power to mining properties in the Elsa and Keno areas and to the Mayo Landing and Keno City communities.

The diesel-electric plants supply the needs of Federal Government departments and general residents of the communities in which they are located. In addition to these plants the Commission operates a power and heating plant at the Fort McPherson residential school for the Department of Northern Affairs and National Resources, and the municipal water system and central heating plant supplying the hostel and school premises at Fort McPherson, N.W.T. Details of construction completed or under way in the Territories during 1960 are outlined at p. 582.

CHAPTER XIII.—FISHERIES AND FURS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—FISHERIES

Section 1.—Commercial Fishery Resources*

The waters of two mighty oceans—the Atlantic and the Pacific—and the most extensive inland system of rivers and lakes in the world provide Canada's fishermen with valuable harvests. The annual catch of some 2,000,000,000 lb. of fish and shellfish has a marketed value of more than $200,000,000. Only about one-third of this catch is used in Canada, the remainder going abroad in fresh, frozen, canned, salted, dried or otherwise preserved form. Of the fish-exporting nations of the world, Canada is surpassed only by Norway and Japan. There are more than 79,000 commercial fishermen in Canada and, in addition, many thousands of persons are employed in the fish-processing industry.

Atlantic Fisheries.—On the Atlantic Coast, groundfish, especially cod, and lobsters are the mainstay of the fisheries, while herring, mackerel and alewives supply a pickling industry that is also of considerable importance. The Atlantic catch is ordinarily about twice as heavy as the Pacific and, generally, is more valuable.

The cod banks in the Atlantic off Newfoundland are known to fishermen all over the world. Besides cod, they yield other groundfish, mainly haddock, redfish, plaice and flounder. Although two-thirds of the cod catch is landed in Newfoundland, the lesser part of the Island's receipts now comes from the banks. The traditional Newfoundland schooner fishery which formerly supplied the saltfish trade has died out but a very active inshore summer trap fishery, followed by a trawl fishery from small boats in the late summer and early autumn, continues to supply the industry. The bulk of the trap and trawl catches is salted. The family business which combines fishing with processing has disappeared from the Atlantic Coast except in Newfoundland, and even there it is diminishing. Nova Scotia's drying plants depend more and more on raw supplies from Newfoundland, which they receive in salt bulk form. Heavy exports of saltfish go from the Atlantic Provinces to the Caribbean area, with smaller amounts to Italy, Spain and Brazil.

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* Prepared by the Information and Educational Service, Department of Fisheries, Ottawa.

Although schooner fleets are a thing of the past, except for a few vessels sailing from Nova Scotia, modern trawlers and draggers out of ports along the southern coast of Newfoundland and the Atlantic Coast of Nova Scotia fish the banks in all seasons, weather permitting, to supply mixed groundfish to the processing plants in their home ports. These produce fresh and frozen fish and fillets as well as frozen fish blocks to meet a North American demand that increases steadily with the population. The frozen blocks are the raw material of the now important fish-stick industry.

In 1960 the lobster catch was 50,100,000 lb., with a landed value of $18,040,000. Although there was a decrease in cod landings—603,400,000 lb. as compared with 642,000,000 lb. in 1959—the value of the catch to fishermen at $16,823,000 was only slightly lower than that of the previous year. Because of their relatively high unit price, lobsters are the main source of income for fishermen in New Brunswick and Prince Edward Island, and provide about one-third of the value of the Nova Scotia catch. They are taken in baited traps as they crawl about in shallow water looking for food. Most of the catch is marketed alive, fresh boiled or as fresh or frozen lobster meat and the remainder is canned. The United States provides an excellent market with peaks of demand in the summer vacation season and at Christmas. Hitherto unexploited scallop beds, recently discovered on George's Bank off the mouth of the Gulf of Maine, are becoming an increasingly valuable resource.

The annual Atlantic herring catch is around 225,000,000 lb., about one-third of which is comprised of the small-sized herring used by New Brunswick's sardine canneries. Smoke houses and pickling plants produce a variety of herring products and the fish are also in steady demand for lobster bait. The bulk of the catch is taken in purse-seines or weirs. Mackerel and alewives are also utilized by pickling plants but both have provided dwindling catches over the past decade. Mackerel are netted in open water and alewives are trapped as they enter estuaries on their way to freshwater spawning beds.

The Atlantic salmon catch, after a long and fairly steady decline, has been on the increase in recent years. This fish goes exclusively to fresh markets. Before the War, frozen Canadian Atlantic salmon was in demand in the United Kingdom. Since the War it has been barred from that market by import restrictions and there has been scant surplus for export in any case. In 1959, however, the import restrictions were lifted and, with improved catches, hopes have risen for resumption of this trade.

Pacific Fisheries.—Salmon is the most valuable of the Pacific fisheries, although the landings of herring are heavier. Halibut is third in importance, followed by other groundfish and shellfish. The proportion of the total landed value provided by salmon gives an indication of the importance of that fishery to British Columbia fishermen. For example, in 1960, a low year in salmon cycles, the total landed value of the Pacific catch was $28,000,000, of which salmon accounted for $17,000,000. In the high cycle year of 1958, the value of the salmon catch alone was $35,000,000 and the total landed value was slightly over $50,000,000.

The salmon catch is made up of five species—sockeye, pink, chum, coho and spring. These fish are caught as they return from the sea to their native streams to spawn and die. Sockeye, for instance, return after four years at sea so that, four years after a favourable hatching year on sockeye streams, a heavy catch of this species may be expected. When the peak runs of several different species occur in the same year, fishing is very good. The fish congregate off the mouths of their rivers and move into them in heavy concentrations. Commercial salmon fishing is limited to tide-water and is divided into two efforts—net fishery by seine and gillnet for the canneries and troll fishery for the fresh fish market. Net fishing is pursued in all the protected waters of British Columbia's deeply indented shoreline, and troll fishing off coasts facing the open sea, especially off the western coast of Vancouver Island. Hundreds of seiners and thousands of gillnet and troll boats engage in the fishery every year.

After hatching, sockeye spend a year or two in a lake before going to sea. When caught on their return from the ocean they weigh about six pounds each. This is a summer fishery, usually from mid-June to September. The bulk of the catch is taken by gillnet and the remainder by purse-seine; as sockeye feed on small crustaceans, they are not attracted by the lures of the troll fishery. Landings are smaller than the catch of chums or pinks but more valuable because, with its firm texture and attractive colour, canned sockeye commands the highest consumer price.

Pink salmon mature and return after only two years at sea. The fish average four to five pounds. Both pinks and chums are widely distributed up and down the coast but pinks appear in a more concentrated run. Chums return after four years at sea when they average about ten pounds in weight. They usually appear in two rather scattered runs, one in early summer and one in the autumn, and contribute somewhat more than pinks to the total volume of the salmon catch. Coho hatch in small streams and are vulnerable to summer water levels. At sea they grow rapidly to weights between five and ten pounds and return to spawn after three years. They are taken by net or troll for canning or for the fresh market, depending on current demand. Mature spring salmon usually run between ten and twenty-five pounds in weight. Since they feed on small fish, they can, like coho, be taken by lure but about one-third of the catch is secured with gillnets, notably at the mouth of the Fraser. They are usually caught in their third or fourth year and are favoured on the fresh fish market.

About three-quarters of the annual salmon catch is canned and most of the remainder goes to the fresh market. Vancouver and Prince Rupert are the major processing centres.

The main stocks of herring move inshore in the autumn and winter, spawn in the spring and then return to summer feeding grounds offshore. Only small stocks remain on the fishing grounds throughout the year. Consequently, the bulk of the catch is taken from October to March. As the total known supply of this species in British Columbia is being exploited, catches are limited to local quotas by area. Fishing is by purse-seine and the catch is converted into oil and meal, mainly at Steveston, Vancouver or Prince Rupert. The 1960 herring catch was less than half that of the previous year—186,600,000 lb. compared with 443,000,000 lb. in 1959. Fishing operations ceased for several months during the year because of a depressed market for products of this phase of the industry.

While salmon and herring live at mid-water depths, halibut feed on the bottom and are usually caught beyond the three-mile limit. Canadian and American longliners share in this fishery off the coasts of both Alaska and British Columbia and, by joint agreement, the catch is controlled by a system of quotas and fishing seasons in various areas. The most productive halibut grounds on the Continent are those adjacent to British Columbia, and American as well as Canadian vessels, even when fishing off Alaska, usually land at Prince Rupert or Vancouver. The catch amounted to 33,500,000 lb. in 1960, an increase of 3,600,000 lb. over the previous year; however, the landed value at $5,433,000 was lower by $178,000 than the 1959 value. Much of the halibut caught is frozen for the fresh market in the United States.

Two other species of bottom-feeding fish—soles and grey cod—are taken by the trawler fleet, usually beyond the three-mile limit either in Hecate Strait or off Vancouver Island. These vessels drag a large-mouthed, tapering net across the ocean floor and scoop up the fish feeding there. They operate mainly in the spring and summer and on smooth bottom in depths between twenty and seventy fathoms. During the winter they pursue a limited fishery in the relatively protected waters of the Strait of Georgia. Ling cod and black cod also feed on the bottom. Small boats rigged with one or two lines and a few hooks take most of the ling cod catch in the Strait of Georgia but further supplies are captured together with other groundfish in course of the trawler fishery. The bulk of the black cod is taken off Alaska by the large longliners that also fish for halibut. These vessels lay their long lines on the ocean floor with hundreds of baited hooks attached to them.

All groundfish, including halibut, are marketed mainly in filleted or steak form, usually fresh or frozen but occasionally smoked. Canada's Pacific groundfishery developed rapidly during and just after World War II when there was world-wide urgent need for protein food supplies. Expanding from almost negligible proportions in the prewar decade, landings now often exceed 20,000,000 lb. annually. A recent feature of this growth is an increasing trade in coarse fish for mink feed.

British Columbia also has a considerable shellfish resource, including crabs, oysters, shrimps and clams. The crab fishery, centred in the northern Queen Charlotte Islands, has developed in response to steady market demand. Crabs are trapped from the low-tide mark to a depth of about 120 feet and are marketed either fresh or canned. The oyster industry is predicated on yearly import of spat from Japan, native supplies having been fished out many years ago and attempts to transplant Atlantic oysters having achieved very limited success. The present fishery is located in the Strait of Georgia. The oysters are larger than the Atlantic variety and are not eaten raw. They are shucked for market and sold fresh or frozen. Shrimp trawling in the Strait of Georgia is an off-season source of income for salmon troll or gillnet boats. Shrimps are cooked before the meat is taken from the shell, to be sold fresh or frozen. Razor clams occur in the Queen Charlotte Islands and butter clams in many small areas of suitable beach along the full length of the coast. Both kinds are dug by Indians and canned. Little neck clams, virtually limited to Vancouver Island, are mainly exported fresh to the United States market.

Inland Fisheries.—In 1960 the value of fish from Canadian lakes and streams exported to the United States totalled $18,976,000. The bulk of the catch comes from the Great Lakes, Lake Winnipeg in Manitoba and Great Slave Lake in the Northwest Territories, but 600 smaller lakes are also fished commercially. Ontario is the heaviest producer, with Manitoba in second place and Saskatchewan in third but output of all western areas is increasing as improved transportation facilities enable fishermen in remote areas to get their catch to market. Great Slave Lake yields almost all the commercial catch of the Northwest Territories. It supports a gillnet fishery for whitefish and lake trout, with catch limits set by the Federal Government.

Whitefish and pickerel, in approximately equal proportions, together comprise about half the Canadian freshwater catch and perch is next in both quantity and value. Sturgeon and lake trout are valuable additions and tullibee and pike are taken in considerable quantities. A wide variety make up the remaining 10 p.c. of the landings, ranging from the aristocratic goldeye to the lowly chub.

Section 2.—Governments and the Fisheries

The British North America Act gave the Federal Government full legislative jurisdiction for the coastal and the inland fisheries of Canada and under this Act laws are made for the protection, conservation and development of the fisheries throughout the country. However, the provinces have, by agreement, assumed administrative responsibilities in varying degree. Consequently, though all the regulations governing fishing are made by the Federal Government, the work of administering the fisheries (enforcing the different laws and regulations, inspecting fish products, issuing licences, etc.) is done without duplication of staff either by federal or by provincial officers, according to arrangement.

Specifically, all tidal or sea fisheries except those of the Province of Quebec are administered by the federal Department of Fisheries, and the freshwater or non-tidal fisheries, with some exceptions, are administered by the provincial departments. Quebec takes responsibility for all its fisheries including those in salt waters. Ontario, Manitoba, Saskatchewan and Alberta administer their freshwater species. In British Columbia, provincial government control extends to the freshwater forms and the Federal Government is responsible for marine and anadromous species. In Prince Edward Island, Nova

Scotia, New Brunswick, Newfoundland and the Yukon and Northwest Territories, the Federal Government maintains complete control; administration of the fisheries of the National Park areas throughout Canada is the responsibility of the Canadian Wildlife Service, Department of Northern Affairs and National Resources.

Subsection 1.—The Federal Government

The work of the Federal Government in the conservation, development and general regulation of the nation's coastal and freshwater fisheries is performed by three agencies under the Minister of Fisheries:—

(1) The Department of Fisheries proper with headquarters at Ottawa, Ont., and area offices under Area Directors at Vancouver, B.C., Winnipeg, Man., Halifax, N.S., and St. John's, Nfld.

(2) The Fisheries Research Board of Canada with headquarters at Ottawa and eight stations across Canada.

(3) The Fisheries Prices Support Board with headquarters at Ottawa.

A brief outline of the functions of these agencies is given in this Subsection.

The Department of Fisheries.—The chief responsibilities of the Department of Fisheries throughout Canada are, in brief: to conserve and develop Canada's primary fishery resources; to encourage the development of the fishing industry in the national economy; to inspect fish products, establish standards of quality and promote the optimum utilization of the resource; and to develop a proper public understanding of the resource and the industry.

The larger part of the staff of the Department is stationed in the field and is composed mainly of protection and inspection officers. The protection officers, including those on the Department's 82 patrol and protection vessels, are concerned with the enforcement of the conservation regulations under the Fisheries Act and other Acts designed to ensure a continuing maximum yield of fish, and are also responsible for the inspection of fish products and processing plants under the Fish Inspection Act and relevant section of the Meat and Canned Foods Act.

A conservation program is carried out by the Conservation and Development Service of the Department. Protection officers enforce regulations pertaining to restricted areas, close seasons, limitations in location and types of gear, and also inspect spawning streams and keep them clear of obstructions. Biologists investigate such problems as pollution and water supply, and engineers construct fishways to enable fish to bypass obstructions of all kinds. Hatcheries are maintained to restock waters where the fisheries are under federal administration.

For the past few years a bounty has been paid for the killing of the parasite-carrying harbour seals along the Atlantic and Pacific Coasts at a rate of $10 for adults and $5 for young seals. Total payments for the year ended Mar. 31, 1960 amounted to $31,200.

Inspection of fish and fish products to ensure a high standard of quality is carried out by the Inspection and Consumer Service, and fish inspection laboratories are maintained on the Atlantic and the Pacific Coasts and in Toronto and Winnipeg. A staff of home economists operates test kitchens in Ottawa, Toronto, Vancouver, Montreal, Halifax, Edmonton and Winnipeg, and conducts demonstrations and lectures on methods of preparing and cooking fish and fish products.

Through the medium of printed material, films, radio, television and exhibitions, the Information and Educational Service of the Department informs the public on the various aspects of the industry and the work of the fisheries services, with the object of developing a better understanding of the resource and those engaged in its exploitation. This Service works closely with the Conservation and Development Service in matters concerning the conservation of fisheries and with the Inspection and Consumer Service toward encouraging increased consumption of Canadian fish products in the domestic, United States and other markets.

The Economics Service engages in two related fields of responsibility: (1) to provide the government and the commercial fishing industry with current information, including statistical data, under the general heading of trade intelligence, and (2) to carry out studies and investigations in the primary fisheries and in the processing and distribution of fish products. In the first field, the Service works in close co-operation with the Dominion Bureau of Statistics and the Foreign Trade Division of the Department of Trade and Commerce; in the second, there is similar collaboration with the Fisheries Research Board. In both, a necessary contribution is made to the formulation of policy for fisheries management, industrial development and market services.

In addition to these regular services, the Department assists the commercial fishing industry in several special ways. To promote efficient primary fishing operations and improve the marketing of fishery products, assistance is provided for the construction of draggers and longliners and for bait-freezing and storage facilities on the Atlantic Coast. The Fishermen's Indemnity Plan affords low-cost protection from losses of boats and lobster traps through storms and other causes. The Plan, in operation since 1953, meets a long-standing need on the part of small-scale individual fishermen. Vessels valued at from $250 to $10,000 may be insured with payment of a premium of 1 p.c. of the appraised value per annum. Up to Dec. 31, 1960, a total of 5,560 vessels with an appraised value of $17,545,505 had been insured under the Plan. In response to considerable demand for a similar type of protection against unusual losses of fishing gear and equipment other than vessels, a first step was taken by the introduction of regulations giving a measure of compensation to lobster fishermen suffering abnormal losses of lobster traps, provided that a small premium has been paid by the fisherman. The premium rate varies in accordance with conditions in the different fishing areas but has been kept low. The Department also provides financial assistance to educational institutions agreeing to carry out specialized educational work among fishermen.

International Fisheries Conservation.—Conservation of the resources of the high seas can be effected only through regulation, and for this purpose international treaties have had to be made. Canada's obligations under such treaties with the United States and other countries are administered by the Department of Fisheries.

Canada and the United States have led the world in joint fisheries conservation development. Major examples of this joint effort are the International Pacific Halibut Convention, concerned with the preservation of the halibut stocks of the north Pacific and the Bering Sea, and the International Pacific Salmon Fisheries Convention, concerned with the conservation and development of the sockeye and pink salmon of the Fraser River. Investigations carried out under the auspices of Commissions appointed under these conventions, subsequent regulation and limitation of catches, and the construction of salmon fishways appear to have been successful in arresting and reversing an earlier trend toward depletion of these fisheries. Another example of restoring a depleted marine resource by international agreement and action is that of the fur seals of the Pribilof Islands in the Bering Sea. Under a treaty signed in 1911, known as the (North Pacific) Sealing Convention, pelagic sealing was prohibited while the animals were migrating to and from the Pribilofs where most of them breed. This treaty had been signed by the United States, Canada, Russia and Japan, and was one of the earliest conventions on resources of the sea. In 1941 Japan abrogated the treaty and the following year Canada and the United States signed a Provisional Fur Seal Agreement under which Canada, in return for abstaining from pelagic sealing, received 20 p.c. of the annual catch, which was supervised by the United States. A conference to re-negotiate the original convention was begun in Washington in November 1955 and a new settlement was signed by the original four countries on Feb. 9, 1957.

In 1949 the Government of Canada became a signatory, along with nine other countries, to the International Northwest Atlantic Fisheries Convention which came into force in 1950. The Commission established under this Convention, with headquarters at Halifax, N.S., makes scientific investigations of the fishery resources of the northwest Atlantic.

The Commission has no regulatory powers but can make recommendations to the respective governments regarding measures that may be necessary for maintaining the stocks of fish that support the international fisheries in the Convention area. Treaty signatories are: Canada, Denmark, Iceland, the United States, the United Kingdom, France, Italy, Norway, Portugal and the Federal Republic of Germany.

A step toward international action in regulating the high seas fisheries of the northern Pacific Ocean was achieved in December 1951 when Canada, the United States and Japan conferred at Tokyo. The resulting Convention was ratified by the three contracting governments and instruments of ratification were deposited at Tokyo in June 1953. The treaty is known as the International Convention for the High Seas Fisheries of the North Pacific Ocean and aims at providing the maximum sustained yield of the fishery resources of the northern Pacific non-territorial waters with each of the parties assuming obligations to encourage conservation measures. The Commission established under this Convention is studying the northern Pacific fisheries and will determine the application of the treaty principles and promote and co-ordinate the necessary scientific studies.

The seventh, and latest, international fisheries agreement to which Canada is a signatory is the Great Lakes Fisheries Convention, which provides for joint action by Canada and the United States in Great Lakes fishery research and in a program for the control of the predator lamprey in these waters. This Convention came into force in October 1955.

Canada is a member of the International Whaling Commission and is obligated to collect biological data on whales caught by Canadian vessels. Whaling operations are conducted in some years off the coasts of Newfoundland and British Columbia.

The Fisheries Research Board.*—The Fisheries Research Board of Canada was established in 1937 to succeed the Biological Board of Canada which in 1912 had succeeded the Board of Management of the Canadian Marine Biological Station established in 1898. The Board functions under the control of the Minister of Fisheries as an independent fisheries research body carrying out "investigations of practical and economic problems connected with marine and freshwater fisheries" (Fisheries Research Board Act) and, as such, provides the Department of Fisheries with services for research into problems encountered by the Department in its administration of the fisheries of Canada. The Board carries out biological research through five centres across Canada, oceanography at two and technological studies at five others. The Board consists of a full-time chairman appointed by the Governor in Council and up to 18 unpaid members appointed by the Minister of Fisheries; as stated in the Fisheries Research Board Act, "a majority of the members of the Board, not including the Chairman, shall be scientists, and the remaining members of the Board shall be representative of the Department and the fishing industry".

The biological work of the Board is designed primarily to provide a general scientific basis for the conservation and wise management of Canada's vast marine and freshwater fishery resources. Investigations include the life histories of the various species of commercial importance, their population dynamics, their diseases and enemies. Also investigated are positive cultural methods in areas where some control of the environment is possible; new fishing grounds are sought and experiments in improvement of fishing methods undertaken. The biological work on the Atlantic Coast is conducted out of stations at St. Andrews, N.B., and St. John's, Nfld.; Arctic work is directed from Montreal, Que.; work on freshwater fish is directed from a station at London, Ont.; and Pacific Coast work is directed from a station at Nanaimo, B.C.

Oceanography includes the study of the biological, chemical and physical aspects of the marine and freshwater environments of fish and other aquatic organisms of importance. These studies are necessary to understand the occurrence and distribution of the fish and are carried out by the Board's two oceanographic groups, operating from Halifax, N.S., and Nanaimo, B.C.

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* Prepared by Dr. J. L. Kask, Chairman of the Fisheries Research Board of Canada, Ottawa.

The technological studies are aimed at making the best use of Canada's fishery catches. Investigations are conducted toward improving methods of preserving and processing and in the utilization of fish wastes. In recent years considerable work has been done on mechanization to further develop higher efficiency in the industry. The technological work on the Atlantic Coast is carried out at stations in Halifax, N.S., and Grande Rivière, Que., and applied work for Newfoundland is under the supervision of a unit at St. John's, Nfld., and for inland areas under a unit at London, Ont. A station at Vancouver, B.C., undertakes Pacific Coast studies.

The Fisheries Prices Support Board.—Under the Fisheries Prices Support Act passed in 1944, this Board was set up in July 1947 to recommend to the Government price-support measures when severe price declines occur. The Board functions under the direction of the Minister of Fisheries and consists of a chairman, who is a senior officer of the Department of Fisheries, and five members chosen from private and co-operative firms in the industry, representative of the various fish-producing regions of Canada.

The Board has authority to buy quality fishery products under prescribed conditions and to dispose of them by sale or otherwise, or to pay to producers the difference between a price prescribed by the Board and the average price the product actually commands. The Board has no power to control prices nor has it any jurisdiction over operations in the fishing industry or the fish trade. Money necessary for dealings in fishery products is available to the Board from the Consolidated Revenue Fund to a maximum amount of $25,000,000 but only on recommendation of the federal Treasury Board and authorization of the Governor in Council.

The Board maintains a small staff for administrative activities. The work is closely integrated with that of the Department's Economics Service and, where possible, services required by the Board are carried out by Department personnel. The Board has carried out field surveys on market conditions and possibilities and on factors affecting the income of fishermen in the various producing areas. The financial position of fishermen is kept under continuous review and recommendations are made to the Government on the basis of the findings. Special investigations are made when serious problems arise in particular areas.

Subsection 2.—The Provincial Governments*

An outline of the work undertaken by each of the provincial governments in connection with administration of commercial and game fisheries is given in the following paragraphs.

Newfoundland.—The provincial Department of Fisheries in conjunction with the Newfoundland Fisheries Development Authority, a Crown corporation established in 1953, is concerned mainly with improvement and development of fishing and production methods. It conducts experiments and demonstrations in longlining, Danish seining and otter trawling, in the construction of multi-purpose fishing craft, and in the exploration of potential fishing grounds.

Loans are made to processors for the establishment and expansion of fish processing plants and for deepsea draggers and also to fishermen for the construction and purchase of modern vessels capable of a greater variety of fishing operations and larger production. Fishermen receive further aid through bounty payments at the rate of $160 per ton for newly constructed vessels under the Fishing Ships (Bounties) Act of 1955. The Fishing and Coastal Vessels Rebuilding and Repairs (Bounties) Act was passed in 1958 to enable the government to assist financially in maintaining and prolonging the life of the existing fleet, and in 1959 the Coasting Vessels (Bounties) Act was passed, designed to encourage the construction of new coastal vessels for service in Newfoundland waters by granting a maximum bounty payment of $300 per ton for locally built ships not exceeding 400 gross tons.

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* Prepared by the respective provincial departments responsible for fisheries administration.

Other services include the operation of fisheries training schools in navigation and engineering, advisory services to fishermen on gear and equipment, industrial research, plant construction, plant engineering and economics, assistance to fishermen's unions, weather and ice reports, and search and rescue. The Fisheries Salt Act passed in 1957 implements more rigid control over the use of fisheries salt.

The inland waters of Newfoundland, although they provide excellent sport fishing, are not commercially exploited. The lakes and ponds remain under the authority of the Natural Resources Branch of the provincial Department of Mines and Resources, but the rivers and streams—the resort of migratory fish such as salmon and sea trout—are under federal control. Matters of conservation and guardianship are therefore mainly or wholly the concern of the federal Department of Fisheries although, to the extent to which they affect the ponds and lakes, they are subject to provincial or joint action.

Prince Edward Island.—The sea and inland fisheries of Prince Edward Island are administered by the Federal Government. The provincial Department of Fisheries supplements federal activity, and is concerned mainly with development of the fisheries industry. The Department provides technical assistance and, in conjunction with the Fisheries Research Board of Canada and branches of the federal Department of Fisheries, engages in some experimental work.

Financial assistance is made available to fishermen through the Fishermen's Loan Board of Prince Edward Island, a body corporate operating under the provincial Department. The Fishermen's Loan Board operates under authority given by the Re-establishment Assistance Act and regulations thereunder, approved by the Lieutenant-Governor in Council, Jan. 7, 1949, with amendments. Loans are made to fishermen and companies for the purchase of boats, engines and other deck machinery at an interest rate of 5¾ p.c. Since its reorganization in 1949, the Board has lent approximately $1,500,000 for the modernization of the inshore and offshore fleets. Loans for the construction or expansion of processing plants are available through the Industrial Establishments Promotion Act under which loans may be made for facilities handling agricultural, horticultural or fishery products.

Game fisheries are the responsibility of the Department of Industry and Natural Resources. The streams of the province, mostly spring-fed and fairly constant in flow, provide very favourable conditions for the reproduction of game fish, of which speckled trout is the most important variety. Investigations concerning the production of trout of a size attractive to anglers are being conducted by the Fisheries Research Board of Canada at sites provided by the provincial Department. Unfortunately many of the formerly fertile and highly productive ponds of the province have disappeared, and the provincial Department is actively concerned with damming and restoring these for the enjoyment of the public.

Nova Scotia.—Although the Federal Government has exclusive jurisdiction over the marine and inland fisheries of Nova Scotia and attends to all phases of administration related thereto, the Nova Scotia government operates in several fields where provincial initiative is found to be necessary and appropriate, having regard for the importance of the fishery resources in terms of employment, industry, trade and recreation.

In the commercial fisheries, provincial government interests are the concern of the Fisheries Division of the Department of Trade and Industry. The Fishermen's Loan Board and the Industrial Loan Board are administered within this Department; the first makes loans to fishermen for the purchase of boats and engines, and the second makes loans for the construction or improvement of fish processing plants. A staff of fisheries engineers performs inspection and survey duties for the Loan Boards and provides technical assistance and advice to loan applicants and others in the fisheries and allied industries, notably the boatbuilding industry. A staff of instructors conduct training courses for fishermen in the care and maintenance of marine engines, in basic navigation and in the design, construction and maintenance of nets and other gear. This program receives substantial assistance from the Vocational Training Branch of the federal Department of Labour. The on-course instruction is supplemented frequently by informal on-the-spot assistance to smaller groups who find themselves in need of technical help with particular problems. The Fisheries Division, with financial and/or technical assistance provided by the Industrial Development Service of the federal Department of Fisheries, also organizes and conducts demonstrations of fishing methods and gear of types untried in some or all of the several fishing areas of the province.

New Brunswick.—The fisheries of New Brunswick, both tidal and inland, are under the jurisdiction of the federal Department of Fisheries and angling in Crown waters is under the jurisdiction of the provincial Department of Lands and Mines. To supplement the activities of the federal Department of Fisheries and to establish closer liaison between the fishing industry and various government departments and agencies, both federal and provincial, in all matters relating directly or indirectly to fisheries, the New Brunswick government created in 1946 a Fisheries Branch and a Fishermen's Loan Board within its Department of Industry and Development.

Commercial fishing is one of the most important basic industries of the province. More than 6,500 fishermen and 2,500 plant workers are employed in this industry; the gross yearly income of the fishermen is over $9,000,000 and the total marketed value of fish products is approximately $25,000,000. Recognizing its contribution to the economy of the province, the New Brunswick government appointed, in 1960, a Deputy Minister of Fisheries who is directly responsible to the Minister of Industry and Development in all matters relating to fisheries.

Since its inception, the Fishermen's Loan Board has disbursed more than $5,300,000 for the construction of fishing vessels and the purchase of modern equipment and diesel motors for fishermen of the province. Loans of $1,500 to $2,500 are made available to inshore fishermen for the purchase of lobster boats and engines, and amounts of $9,000 to $50,000 to offshore fishermen for the building and equipping of modern longliners, Danish seiners and draggers. These amounts represent the net amount lent to fishermen, which is about 70 p.c. of the total cost of the vessels after deducting the required down-payment and the Federal Government subsidy of $165 per gross ton. New Brunswick now has a fleet of 89 groundfish draggers and 22 longliners and Danish seiners.

New designs of fishing vessels are being prepared by the Fisheries Branch in co-operation with naval architects and boat-builders. The vessels, as completed, are being used for experimental purposes and a certain pattern of standardization is followed to maintain building and maintenance costs at the lowest possible level. A 48-foot longliner was tested in 1960 as a Danish seiner with very satisfactory results. The Fisheries Branch is continuing to study the vessel to determine its applicability to gillnetting for groundfish. In co-operation with the Industrial Development Service of the federal Department of Fisheries, experimental projects such as codfish gillnetting, Danish seining for flounders and plaice, mid-water trawling for sardines and herring, mechanical digging for bar clams and quahaugs, etc., are being undertaken by the Fisheries Branch in an effort to introduce more modern fishing methods and equipment.

Practical training is made available by the Fisheries Branch to dragger operators and inshore fishermen during the winter season in various parts of the province. A permanent school of fisheries has been in operation, under the auspices of the Caraquet School Board, since the autumn of 1959. Nineteen students attended the first portion of the two-year course.

To co-ordinate the efforts of the Atlantic Provinces and the Federal Government in the promotion of fisheries, the federal Department of Fisheries formed a Provincial-Federal Atlantic Fisheries Committee of which the Province of New Brunswick is a member.

Quebec.—The provincial Ministry of Game and Fisheries administers both the sea and the inland fisheries of Quebec. The Ministry has two divisions—the Division of Maritime Fisheries and the Division of Fish and Game, the latter being charged with the administration of the inland fisheries.

Sea Fisheries.—The Quebec Government gives much consideration to the administration of the sea fisheries of the province. For the benefit of producers and fishermen, it operates a network of cold storage plants for the freezing and preservation of fish. The network comprises 59 plants, together having a daily freezing capacity of 485 tons and a storage capacity of 22,000,000 lb. of fish. These plants also perform a valuable service to fishermen by providing them with frozen bait and ice. In addition, the Ministry owns and maintains 123 stations in small fishing ports where fish is kept under proper conditions while awaiting collecting trucks or boats, and also operates two artificial drying plants with a processing capacity of 6,000,000 lb. of fish annually.

The Ministry maintains a staff of fish wardens, technicians and technologists to administer fishery legislation and to assist in the application of new techniques for the expansion of the industry. The central administration is located at Quebec City with an office at Gaspe for the administration of cold storage plants. Fish inspection is carried out by federal inspectors who are vested with additional powers by the Provincial Government with respect to local sales.

Educational work among the fishermen and producers is conducted by the Ministry to teach the latest methods of fish preparation and of obtaining high-quality products. The new Fisheries Training School at Grande Rivière gives to fishermen of all ages the opportunity of taking free theoretical and practical courses in fishery, and the Superior School of Fisheries at Ste. Anne de la Pocatière conducts a four-year course for technologists. Encouragement is given to the co-operative associations of fishermen through the Social Economic Service of the latter institution. Under a maritime credit system, fishermen may obtain loans from credit unions for the purchase of boats and gear. The Ministry adheres to the federal-provincial agreement on the building of draggers and longliners and assumes the building costs on a capital refunding plan.

The fish trade is promoted through advertising campaigns in newspapers and magazines, cooking demonstrations, educational films and the free distribution of fish recipes and publicity leaflets as well as through exhibits at fairs.

Hydrographical research in the Gulf of St. Lawrence includes studies on the location of new fishing grounds, and experiments on seafish biology are conducted by a Marine Biological Station at Grande Rivière and two substations on the North Shore and the Magdalen Islands. This research has brought into use new types of fishing vessels recommended to fishermen. The Ministry also operates a Limnological Laboratory at Quebec City for studying the biology of the freshwater fish of the St. Lawrence River and its tributaries. The Quebec Aquarium at Quebec City exhibits freshwater and saltwater fish in 30 large tanks.

Inland Fisheries.—The Division of Fish and Game exercises jurisdiction over the inland waters. Three hundred full-time wardens are employed and licences are required for sport fishing and hunting, the revenue from which is applied to the improvement of fishing and hunting conditions. Five hatcheries are maintained at strategic points throughout the province—St. Faustin, Lachine, Lac Lyster, Tadoussac and Gaspe. These establishments distribute speckled trout, Atlantic salmon and grey trout fry, maskinonge fingerlings and older fish.

The Ministry administers five parks and 13 reserves in all of which, except for Mount Orford Park, excellent fishing may be found. Gaspesian and Laurentide Parks are renowned for their trout fishing. Chibougamau Reserve and La Vérendrye Park, situated on the height of land, are eminently suited to canoe trips in search of pickerel, pike and grey or speckled trout. Five salmon streams, all under the jurisdiction of the Fish and Game Division, are open to anglers—the Romaine River, the St. Jean River, the Petite Cascapédia River, the Matane River and the Port Daniel River. The Ministry co-operates with sportsmen through a joint committee composed of departmental officials and the directors of the larger fish and game associations. The committee studies the maintenance of satisfactory fishing and hunting conditions and other problems arising out of the ever-changing conditions of modern life and their effect on the wildlife of the province.

The Biological Bureau of the province, located at the University of Montreal, operates two stations for practical work in the study of problems connected with marine life. One is located in Mont Tremblant Park and the other in Laurentide Park.

Ontario.—The fishery resources of Ontario are administered by the Fish and Wildlife Branch, Department of Lands and Forests. The Branch operates under the authority of the federal Fisheries Act, the Special Fishery Regulations for the Province of Ontario, the Ontario Game and Fisheries Act and the Regulations connected therewith.

Commercial Fishing.—The commercial fishing industry in Ontario provides employment for about 3,200 persons directly and for many more indirectly, and produces an annual yield of from 35,000,000 lb. to 45,000,000 lb. of fish. An all-time high catch of about 60,000,000 lb. was recorded in 1956. The industry, although widely scattered throughout the province, is centred chiefly on the Great Lakes, particularly Lake Erie which is noted for its blue and yellow pickerel, white bass, whitefish and perch. Other principal species of fish taken commercially are lake trout, herring or cisco, sturgeon, pike, catfish, bullhead, carp, sucker and smelt. Over one hundred smaller inland lakes are commercially fished, principally those in the northwestern portion of the province, and careful management of these lakes is essential to ensure continued production.

The types of fishing boats in use vary from small craft to 60-foot tugs, and types of gear vary from the most common gillnets, pound-nets and trap-nets, seines and baited hooks to small hand-operated seines and dip-nets. Fishing methods and equipment have been modernized extensively during the past few years. Diesel-driven steel-hull tugs have replaced steam-driven wooden tugs, such aids as depth-sounding devices, radar, ship-to-shore and ship-to-ship communications have been developed and a better knowledge of the fish and their movements has been established from biological research findings. Modern icing facilities and transportation methods are in use as well as new types of fishing gear. Trawling for smelt is being carried out experimentally in Lake Erie. This fishing technique is new in the Ontario fishery but has been proven very efficient in harvesting smelt on a year-round basis in this lake.

Most Ontario fishermen are organized into various local associations. These associations are, in turn, represented by the Ontario Council of Commercial Fisheries and by the Lake Erie Fisheries Council, which perform important services to the industry. The Ontario Fishermen's Co-operative and its member groups are of interest also in the organization of the fishery in the province.

Angling.—The sports fishery in Ontario is rapidly becoming one of the major industries of the province. With an estimated freshwater area of some 68,490 sq. miles, the province is one of the most attractive fishing areas on the Continent. Excellent angling opportunities are available for such prized fish as lake, speckled, rainbow and brown trout, yellow pickerel, black bass, pike and maskinonge. It is difficult to measure the total value of the sports fishing industry to the province but the annual revenue from the sale of angling licences alone (mainly to non-residents, as residents require a licence for provincial parks only) is in the neighbourhood of $2,500,000. The management of this valuable resource is administered by a well-trained field staff of conservation officers and biologists located in the 22 forestry districts of the province.

Provincial Hatcheries.—Ontario operates 20 hatcheries and rearing stations and excellent results have been produced in the culture and distribution of various species of game and commercial fish. The primary species reared in these operations include trout (lake, speckled, brown and rainbow), maskinonge, bass, whitefish and yellow pickerel. Four of the finest trout-rearing stations on the Continent are located in this province—at Dorion near Port Arthur, Sault Ste. Marie, Hills Lake near Englehart, and Chatsworth.

Fisheries Research.—Research in Ontario is carried on in the Great Lakes and in inland waters. At the South Bay Mouth Station on Manitoulin Island in Lake Huron, Wheatley on Lake Erie, and Glenora on the Bay of Quinte on Lake Ontario, fishery biological stations are operated for the investigation and study of the commercial and sports fisheries on the respective lakes. In Algonquin Park detailed studies concerning lake trout and smallmouth bass are in progress and management techniques are being tested against the background of a creel census which has been continuous since 1936. Studies of speckled trout have been re-instituted after a five-year break in continuity.

A selective breeding experiment concerning the hybrid between lake trout and speckled trout is progressing favourably. The deep-swimming character of the lake trout and the character of maturity at early age of the speckled trout are those being selected for combination in the hybrid.

Co-operation by Ontario in the field of gear development is being extended through the Federal-Provincial Committee for Ontario Fisheries and in the field of sea lamprey control through the Great Lakes Fishery Commission.

Manitoba.—The freshwater fishery resources of Manitoba have assumed an increasingly important position in the economy of the province. Although the commercial fishing industry experiences periods of fluctuation, nevertheless it is constantly expanding. Production in 1960 of 31,049,100 lb. valued at $6,507,348 provided full-time or part-time employment for 5,330 fishermen. In addition, at least 6,000 persons were engaged in subsidiary industries such as fish-processing, transportation, boat-building and other related industries.

The lakes and streams of the province produce 15 varieties of commercial fish, the most important being whitefish, pickerel, sauger and northern pike. Some 2,145 commercial fishing boats are in operation, varying in size from lake freighters to small skiffs powered by outboard motors. The value of these boats together with nets and other equipment is estimated at $2,910,900 and investment in processing plants and cold storage facilities at approximately $3,000,000, which makes a total capital investment of at least $6,000,000 in plant and equipment.

The Department of Mines and Natural Resources of Manitoba, in supervising commercial operations and enforcing fishery regulations, operates a fleet of modern diesel patrol boats during the open-water seasons and uses bombardiers, snowmobiles and light trucks in winter. All patrol units are equipped with two-way radio communication instruments.

Two spawn-gathering camps and four fish hatcheries are in operation in the province. Two of the latter are pickerel hatcheries; one is engaged in the culture of whitefish eggs, and the other operates on a year-round basis producing several varieties of trout. The fish-culture program employs the latest scientific processes and large plantings of sport and commercial varieties have been made. Data gathered through the years indicate that such culture operations are essential to the maintenance of well-stocked lakes and streams. Five species of sport fish are cultured at the Whiteshell Trout Hatchery—speckled, brown, rainbow and lake trout, and a new hybrid variety called "splake". This splendid species of sport fish, developed by crossing speckled and lake trout, has created great interest among anglers.

A long-range scientific and biological program recently begun is designed to provide valuable factual information on such topics as lake limits and most favourable fishing seasons. Constant progress is also being made in the handling and processing of fish. Both the government and the industry are aware of the current market demands for high-quality packaged products processed in modern plants under sanitary conditions and three plants equipped to meet this demand are located at Lynn Lake, Island Lake and Gods Lake in northern Manitoba. The Department of Mines and Natural Resources, in co-operation with the Department of Health and Public Welfare, has inaugurated a plan to control health and sanitation as it relates to fishing stations and packing plants.

Angling is the major attraction in many of Manitoba's recreational areas and the fishery resource has an enhanced value when utilized in this way. During the year ended Mar. 31, 1960, almost 100,000 angling licences were sold, 13 p.c. of them to non-residents.

Saskatchewan.—The fishing potential of Saskatchewan, both commercial and sport, is becoming more widely realized. More than 31,500 sq. miles of water, about one-eighth of the province's surface area, provide the basis for the fisheries resource. There are at least 57 fish species found in Saskatchewan. The Fisheries Branch of the Department of Natural Resources, with head office at Prince Albert, is responsible for the administration of the fisheries, for the planning of policies and for the development of programs to ensure the proper management and utilization of the resource. The Branch has three main divisions—Fish Management (Commercial and Sport Fisheries Sections), Fish Research, and Fish Culture.

The highlight in the commercial fishing industry for the year ended Mar. 31, 1960 was the holding of the first annual meeting of Co-operative Fisheries Limited. There were 45 fishermen delegates present, representing 13 central and northern fishing areas. This meeting provided an opportunity for about 700 commercial fishermen (one-half of those licensed in the province), who sell their production through co-operative selling agencies, to have a greater share in and responsibility for the development of their industry. The commercial harvest for the year amounted to 12,549,782 lb. taken from 180 lakes with a value of $1,190,302 to the producer. The principal species were whitefish, lake trout, pickerel, northern pike and sturgeon. About 65 p.c. of this catch was taken in summer. Eleven processing plants operating in the province produced 2,787,776 lb. of fillets; five of the plants have qualified for federal inspection in accordance with the federal Department of Fisheries' voluntary fish inspection program.

During the year, 1,260 domestic fishing licences and 1,102 free Indian permits were issued. In addition, 83 fur farm fishing licences were issued to provide feed for 39,473 mink; mink ranchers used approximately 6,000,000 lb. of coarse fish (cisco, burbot and mullet).

Sport fishing has become very important in the province. In 1960, 102,605 angling licences were sold, accounting for a revenue of $248,825. There were 95,360 angling licences sold to residents, indicating that one in every nine Saskatchewan residents is a fisherman.

A research program initiated in 1948 has provided the basis for development of fisheries management programs and policies. The main objective has been to encourage multi-utilization of the fishery, keeping in mind the interests of the various groups particularly concerned with the resource—commercial fishermen, mink ranchers and anglers. The projects undertaken by the Research Division fall into five major categories: (1) studies on the basic productivity and character of lakes and streams; (2) studies of the ecological and life histories of important species of fish; (3) pollution investigations; (4) creel census studies; and (5) miscellaneous projects.

During 1960, biological and fisheries investigations were made of 11 water areas; investigations were initiated on lakes in two provincial parks; the study continued on the lake trout population at Lac la Ronge; pollution and carp research studies were continued; and the report on the survey of the five lakes on the Churchill River near Stanley was completed. There are five permanent biologists and one consultant on staff; in addition, 12 university students were employed during the summer.

The major achievements in the fish-stocking program included the stocking of 461,312 rainbow trout fingerlings in Thomson Lake, a 2,380-acre PFRA reservoir located in the southern part of the province. Approximately 16,100,000 pickerel fry were released in

35 lakes and about 16,040,000 whitefish fry were stocked in three lakes. In addition to the rainbow trout stocked in Thomson Lake, 187,605 fingerlings were stocked in nine water areas.

Alberta.—The Commercial Fisheries Branch and the Fish and Wildlife Branch of the Department of Lands and Forests administer commercial and game fishing, respectively, under authority of the Fisheries Act (Canada) and the Fishery Act (Alberta).

Commercial Fishing.—Regulations under the Fishery Act (Alberta), designed to improve the packing, handling, processing, storage and quality of commercial fish, have been well received and supported by the Alberta industry.

Approximately 6,500 sq. miles of water area yielded some 12,500,000 lb. of fish with a market value of $1,650,000 in the year ended Mar. 31, 1960. Whitefish is by far the most valuable; about 67 p.c. of this species taken during 1959-60 was exported to the United States. Expansion of domestic markets in recent years has resulted in a considerable drop in exports. Other commercially utilized fishes of Alberta in order of value to the fishery market are: walleye, northern pike, yellow perch, tullibee, lake trout, burbot and sucker. Although tullibee represent about 45 p.c. of the total catch, they are used primarily for animal food and so rank well below more desirable species in market value.

Research and management activities are being carried on in the fields of basic lake productivity, population structure and harvest, and age-growth studies on commercial species.

Sport Fishing.—The management of trout streams of the North Saskatchewan and South Saskatchewan river systems is being continued on an alternate year, open-and-closed basis. Surveys have shown that adequate harvests of trout are being realized by this type of management, while protection of breeding stocks, sufficient for natural reproduction, is afforded. Hatchery trout are being utilized almost exclusively for stocking lakes and beaver ponds where natural reproduction is limited or non-existent. There is no closed season on trout, except on streams requiring special regulations for management purposes. Minimum size limits have been removed on all game fish species in the province. Catch limits on trout and Arctic grayling have been reduced recently, while the catch limit on Rocky Mountain whitefish has been increased to encourage the harvest of this widely distributed species. The program of reclaiming lakes by use of commercial fish toxicants is being continued and an evaluation of one of these reclamation projects is being carried out with very encouraging results. Research pertaining to the survival of hatchery-reared trout in streams is also continuing at the provincial biological station at Gorge Creek.

British Columbia.—A Fisheries Office, which was organized in 1901-02 and became very active in fish culture work, building and operating fish hatcheries and instituting scientific research into various fishery problems, was superseded in 1947 by the Department of Fisheries which in turn was superseded in 1957 by the Department of Recreation and Conservation. Commercial fisheries are represented today as the Commercial Fisheries Branch of the Department of Recreation and Conservation. Broadly speaking, the administrative and regulative jurisdiction over the fisheries of British Columbia rests with the federal authority. The ownership of the fisheries in the non-tidal waters is vested in the Crown in the right of the province, as are the shell fisheries such as oyster fishing and clam fishing in the tidal waters. The province administers these fisheries although the regulations covering them are made under federal Order in Council on the advice and recommendation of the province.

The Provincial Fisheries Act provides for the taxation of the fisheries and, under civil and property rights, for the regulation and control of the various fish processing plants under a system of licensing. Provision is also made for arbitration of disputes regarding fish prices that may arise between the fishermen and operators of the various licensed plants. The administration of the Act involves the collection of revenue and the supervision of plant operations.

Net fishing in the non-tidal waters of the province, including commercial fishing, is regulated and administered by the Commercial Fisheries Branch, Department of Recreation and Conservation, and authority for regulation of the game fisheries in non-tidal waters is vested in the Fish and Game Branch which operates a number of trout hatcheries and egg-taking stations for restocking purposes.

The shellfish laboratory at Ladysmith on Vancouver Island, formerly operated by the Department, was closed Dec. 31, 1958. The biological research into those species over which the province has control, principally oysters, clams and other forms of shellfish as well as marine plants, is now conducted by the Fisheries Research Board of Canada at the Pacific Biological Station, Nanaimo, B.C., under agreement with the federal and provincial authorities as of Jan. 1, 1959. The object of this research is to encourage the industry to produce better products more economically and to enable the Commercial Fisheries Branch to regulate the various species so that maximum exploitation may be obtained on a sustained-yield basis.

The Branch co-operates closely with the Fisheries Research Board of Canada.

Section 3.—Fishery Statistics

Subsection 1.—Primary Production

The Atlantic Coast fishermen experienced a most satisfactory year in 1959 both in quantity of fish landed and monetary returns. The value of the catch for the area, at $58,436,000, was the highest on record. While cod is normally the chief source of income for the fishermen, the landed value of $17,023,000 in 1959 was surpassed by a value of $17,387,000 for lobsters. Provincially, Nova Scotia was the most important for the year, having a catch valued at $27,112,000. This amount was 86.6 p.c. above the value of the Newfoundland catch; Newfoundland was in second place followed by New Brunswick, Prince Edward Island and Quebec in that order. Total landings in the area amounted to 1,331,058,000 lb., representing an 0.9-p.c. decrease from the five-year 1954-58 average of 1,343,483,000 lb. Although persistent shore ice prevented Newfoundland fishermen from setting their cod traps until mid-June, heavy runs of large cod arrived in the Gulf of St. Lawrence at about the same time with the result that landings of that species were the heaviest since 1954. The average unit value of the catch was $2.33 per hundred pounds, the highest return to the fishermen since 1952 when DBS records for landings in Newfoundland began.

In Nova Scotia, total landings were 9.6 p.c. lighter than in 1958 but higher unit prices for such important species as cod, haddock, pollock, small flatfish and lobster resulted in the returns to fishermen being over $2,000,000 greater, bringing the value of the catch to a record high. In terms of value, lobster was by far the most important species in 1959, outranking cod, the next most valuable species, by more than $4,900,000. Even so, the lobster catch was not unusually large, being less than 1 p.c. greater than the 1954-58 average of 20,909,000 lb. Landings of cod, unlike those of Newfoundland, were 3.6 p.c. lighter than those of 1958, making the catch the smallest in 20 years. The average price received by fishermen for cod was $3.75 per hundred pounds, an advance of 40 cents over 1958. Haddock came close to replacing cod as the second most important source of fishermen's income in 1959. The landed value at $3,956,000 was only $73,000 below that of the cod catch. The volume of herring taken during 1959, although 42.6 p.c. smaller than that of the previous year, was still about 5,000,000 lb. larger than the 1954-58 average.

In New Brunswick, lobsters made up about 38.6 p.c. of the total value of the 1959 catch, followed by herring with 22.0 p.c. and cod with 16.1 p.c. Landings of cod were the heaviest since 1918 when the Bureau's records began. Since 1953 there has been an almost continuous year-to-year increase in the landings of this species. The small flatfish have also played an increasingly important role in the New Brunswick fishery since 1950, following the introduction of small draggers.

Lobsters have been the most important source of income to Prince Edward Island fishermen for many years and 1959 was no exception. Of a total catch valued at $4,287,000, lobsters contributed $2,843,000 or about two-thirds.

The main species landed in Quebec, from both a quantity and a value standpoint, was cod. The 1959 catch, although 11.8 p.c. smaller than that of 1958, was well above the 1954-58 average of 62,081,000 lb. Herring is the second most important species in volume but the 26,787,000 lb. taken in 1959 was the smallest since 1924.

The lower British Columbia catch was attributable mainly to labour troubles in both the salmon and the herring fisheries. While sockeye, the most desirable canning species, were more plentiful than in any previous low period in their four-year cycle, fishermen were out on strike during most of the run. Fortunately the coho run was late and the fishermen were back on the boats in time to produce the largest pack of coho salmon since 1949. While the herring fleet was idle because of the strike during the summer and until Oct. 7, landings were so heavy during the remainder of the year that by the end of December 444,032,000 lb. had been taken.

1.—Quantity and Value of Sea and Inland Fish Landed, by Province, 1955-59

NOTE.—Figures for the years 1918-54 are given in previous editions of the Year Book beginning with the 1947 edition.

Province or Territory	1955	1956	1957	1958	1959p
			QUANTITY		
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Newfoundland	577,954	621,560	575,825	464,024	562,228
Prince Edward Island	35,931	42,202	39,635	39,078	42,025
Nova Scotia	425,902	442,846	438,687	468,462	423,273
New Brunswick	167,438	194,283	192,299	160,972	226,360
Quebec	129,192	140,110	140,845	124,020	112,954
Ontario	45,634	59,710	51,109	47,175	48,984
Manitoba	34,936	30,397	31,571	31,929	31,052
Saskatchewan	10,152	9,441	11,065	12,600	12,550
Alberta	8,731	9,641	10,415	11,482	12,664
British Columbia	498,376	674,975	490,187	650,589	613,597
Northwest Territories	7,827	6,939	6,584	5,894	5,747
Totals	**1,942,073**	**2,232,104**	**1,988,222**	**2,016,225**	**2,091,434**
Sea Fish	1,823,114	2,107,508	1,868,633	1,901,612	1,974,222
Inland Fish	118,959	124,596	119,589	114,613	117,212
			VALUE		
	$'000	$'000	$'000	$'000	$'000
Newfoundland	14,161	14,969	13,672	11,312	14,529
Prince Edward Island	3,279	3,949	3,550	3,754	4,287
Nova Scotia	23,582	25,038	23,084	24,954	27,112
New Brunswick	6,753	8,146	7,014	7,499	8,763
Quebec	3,453	4,440	4,068	4,195	4,316
Ontario	6,783	7,927	7,047	7,271	4,866
Manitoba	3,477	2,947	3,279	3,540	3,757
Saskatchewan	763	784	939	1,091	1,190
Alberta	688	790	854	879	1,016
British Columbia	27,711	36,058	30,021	51,352	34,995
Northwest Territories	742	787	720	682	703
Totals	**91,392**	**105,835**	**94,248**	**116,529**	**105,534**
Sea Fish	78,267	91,944	80,777	102,505	93,431
Inland Fish	13,125	13,891	13,471	14,024	12,103

2.—Quantity and Value Landed and Marketed Value of the Chief Commercial Fish, by Selected Species, 1958 and 1959

Area and Species	Quantity Landed[1]		Value Landed[2]		Marketed Value of Products[2]	
	1958	1959[p]	1958	1959[p]	1958	1959[p]
	'000 lb.	'000 lb.	$'000	$'000	$'000	$'000
Atlantic Coast						
Groundfish	**874,591**	**971,687**	**24,869**	**29,172**	**65,276**	**62,357**
Catfish	4,803	4,161	156	127	456	343
Cod	530,932	639,138	13,228	17,023	34,595	34,166
Flounder and sole	84,589	91,290	2,608	2,837	6,167	6,382
Haddock	103,366	111,997	4,092	4,970	10,074	10,871
Hake	22,763	20,771	412	386	654	521
Halibut	6,730	6,424	1,761	1,687	2,063	2,200
Pollock	50,320	46,302	882	920	2,564	3,253
Redfish	61,371	40,618	1,488	977	3,693	2,297
Other	9,717	10,986	242	245	5,010	2,324
Pelagic and Estuarial	**297,959**	**292,065**	**7,382**	**7,669**	**20,288**	**22,921**
Alewives	9,429	11,723	140	186	458	485
Herring	233,044	238,916	2,826	3,279	6,848	8,303
Mackerel	16,147	9,451	737	579	1,709	1,233
Salmon	3,453	3,956	1,226	1,453	2,086	2,058
Sardines	[3]	[3]	[3]	[3]	5,901	7,137
Smelts	4,118	3,490	597	461	1,074	821
Swordfish	5,376	6,703	1,439	1,383	1,272	2,025
Other	26,392	17,826	417	328	940	859
Molluscs and Crustaceans	**56,249**	**67,306**	**17,251**	**20,148**	**27,476**	**30,819**
Clams—						
Quahaugs	933	898	40	33	39	61
Soft-shelled	3,573	3,959	189	201	413	383
Lobsters	42,950	45,714	15,376	17,387	24,933	27,291
Oysters	2,857	3,880	302	473	364	502
Scallops	3,332	4,909	1,269	1,872	1,553	2,242
Other	2,604	7,946	75	182	174	340
Other	[4]	[4]	**1,651**	**1,447**	**2,994**	**3,973**
Totals, Atlantic Coast	[4]	[4]	**51,153**	**58,436**	**116,034**	**120,070**
Pacific Coast						
Groundfish	**44,733**	**41,886**	**6,192**	**5,582**	**9,033**	**8,236**
Cod	7,666	7,105	377	369	752	630
Halibut	23,708	23,799	4,902	4,398	6,690	6,237
Ling cod	4,296	4,223	382	390	564	510
Sablefish	576	586	74	88	181	147
Sole	7,654	4,977	424	287	780	552
Other	833	1,196	33	50	66	160
Pelagic and Estuarial	**590,738**	**555,010**	**43,973**	**28,055**	**85,200**	**56,346**
Herring	405,123	444,032	6,712	7,355	8,990	8,843
Salmon	181,318	105,680	37,129	20,503	75,800	45,139
Chum	*38,103*	*23,107*	*3,749*	*2,800*	*8,124*	*5,557*
Coho	*22,355*	*17,823*	*5,383*	*4,498*	*9,502*	*9,801*
Pink	*33,749*	*34,393*	*3,152*	*3,795*	*9,565*	*11,525*
Sockeye	*74,011*	*18,018*	*20,778*	*5,626*	*41,365*	*12,206*
Spring	*12,849*	*12,214*	*4,018*	*3,757*	*5,700*	*5,407*
Other	*251*	*125*	*49*	*27*	*1,544*	*643*
Tuna	18	164	3	29	208	2,101
Other	4,279	5,134	129	168	202	263
Molluscs and Crustaceans	**14,468**	**15,063**	**1,089**	**1,092**	**1,932**	**2,174**
Clams, butter, little neck, razor, etc.	2,427	2,744	65	75	259	310
Crabs	4,209	4,323	384	438	801	1,085
Oysters	5,912	6,952	334	407	385	471
Shrimps and prawns	1,908	1,044	305	172	462	291
Other	12	—	1	—	25	17
Other	**650**	**1,638**	**98**	**266**	**851**	**311**
Totals, Pacific Coast	**650,589**	**613,597**	**51,352**	**34,995**	**97,016**	**67,067**

For footnotes, see end of table, p. 614.

2.—Quantity and Value Landed and Marketed Value of the Chief Commercial Fish, by Selected Species, 1958 and 1959—concluded

Area and Species	Quantity Landed[1]		Value Landed[2]		Marketed Value of Products[2]	
	1958	1959p	1958	1959p	1958	1959p
	'000 lb.	'000 lb.	$'000	$'000	$'000	$'000
Inland						
Freshwater Fish	**105,335**	**105,334**	**13,359**	**11,615**	**19,897**	**17,647**
Bass	1,848	1,445	332	216	373	244
Catfish	1,543	1,268	232	203	259	227
Herring, lake (cisco)	1,917	2,946	82	110	92	123
Perch	17,091	20,709	2,159	1,269	2,471	1,453
Pickerel (blue)	834	50	216	15	243	17
Pickerel (yellow)	15,475	12,996	3,387	2,994	4,874	4,371
Pike	7,231	7,799	353	424	853	944
Saugers	5,473	4,003	1,109	942	1,830	1,421
Sturgeon	627	531	383	284	446	319
Trout	4,966	4,533	675	627	1,182	1,149
Tullibee	10,609	9,945	505	530	733	747
Whitefish	24,023	24,796	3,496	3,548	5,812	5,941
Other	13,698	14,313	430	453	729	691
Other	**9,278**	**11,878**	**665**	**488**	**712**	**514**
Totals, Inland	**114,613**	**117,212**	**14,024**	**12,103**	**20,609**	**18,161**
Grand Totals	[4]	[4]	**116,529**	**105,534**	**233,659**	**205,298**

[1] Excludes livers. [2] Includes value of livers and liver products. [3] Included with "Herring".
[4] Includes seals, seaweed, etc., quantities of which cannot be added.

3.—Capital Investment in Primary Sea and Inland Fisheries Operations, 1957-59

Kind of Equipment	1957		1958		1959p	
	No.	$'000	No.	$'000	No.	$'000
Sea Fisheries	...	**116,193**	...	**110,418**	...	**114,886**
Trawlers	34	6,003	49	7,165	1,479	45,580
Vessels—gasoline, diesel and sail	2,506	46,265	1,503	39,703		
Boats—gasoline, diesel, sail and row	37,795	29,312	40,120	30,711	41,714	37,145
Packers, carrying boats and scows	843	1,671	509	968	434	1,053
Herring gillnets	50,264	1,278	44,109	1,265	..	1,015
Mackerel nets	19,822	615	22,894	712[1]	..	537
Salmon nets, traps and seines	...	5,354	...	5,604	...	5,307
Smelt nets	12,695	464	15,490	620	..	560
Other nets, weirs and seines	...	5,933	...	4,272	...	6,196
Tubs of trawl, skates of gear, hand-lines	...	1,547	...	1,506	...	1,250
Lobster traps and pounds	2,389,766	9,281	2,310,612	8,010	2,448,656	8,463
Other gear	...	1,059	...	2,915	...	1,372
Premises—piers, wharves, freezers, ice-houses, small fish- and smoke-houses	...	7,411	...	6,967	...	6,408
Inland Fisheries	...	**14,667**	...	**14,439**[1]	...	**16,078**[1]
Carrying boats	127	531	101	520	129	480
Gasoline boats, skiffs, canoes	6,677	5,020	6,004	4,894	6,201	5,769
Gillnets	22,163[2]	5,125	21,986[2]	4,624	23,120[2]	5,116
Other nets, weirs and seines	...	1,231	...	1,150	...	1,218
Other gear	...	92	...	154	...	124
Premises—piers, wharves, freezers, ice-houses, small fish- and smoke-houses	...	2,176	...	2,611	...	2,757
Other equipment—fish tanks, bombardiers, trucks, snowmobiles, aircraft, etc.	...	492	...	486	...	614
Grand Totals	...	**130,860**	...	**124,857**	...	**130,964**

[1] Excludes Alberta. [2] Thousand yards.

4.—Persons Employed in the Primary Fishing Industry, by Province, 1957-59

Province	Sea Fisheries			Inland Fisheries		
	1957	1958	1959^{p}	1957	1958	1959^{p}
	No.	No.	No.	No.	No.	No.
Newfoundland	16,469	18,364	18,430	—	—	—
Prince Edward Island	3,000	3,209	3,260	—	—	—
Nova Scotia	15,265	13,747	13,012	—	—	—
New Brunswick	7,815	6,060	6,211	352	160	171
Quebec	5,578	6,213	5,387	1,134	1,064	1,037
Ontario	—	—	—	3,066	3,224	3,527
Manitoba	—	—	—	5,395	5,682	5,312
Saskatchewan	—	—	—	1,500	1,600	1,650
Alberta	—	—	—	5,941	7,805	6,089
British Columbia	12,999	15,263	15,456	—	—	—
Northwest Territories	—	—	—	530	539	503
Totals	**61,126**	**62,856**	**61,756**	**17,918**	**20,074**	**18,289**

Subsection 2.—The Fish Processing Industry

The Census of Industry survey of the fish processing industry covers establishments engaged in the processing of fish at the secondary industrial level. Some fishermen process the fish they land to a certain degree but their operations are not included nor are the minor amounts of processing done in the inland areas (Ontario, the Prairie Provinces, and the Northwest Territories). In 1959, products of fish processing establishments had a selling value of $169,021,000, considerably lower than the value for the previous year. The East Coast fish plants contributed $94,499,000 and those of British Columbia $74,522,000.

5.—Summary Statistics of Seafish Processing Establishments, 1955-59

Item		1955	1956	1957	1958	1959
Establishments	No.	**574**[1]	**486**	**426**	**431**	**409**
Newfoundland	"	34	43	36	35	36
Prince Edward Island	"	36	30	27	22	20
Nova Scotia	"	194	140	126	138	142
New Brunswick	"	167	147	123	126	99
Quebec	"	71	74	70	66	68
British Columbia	"	72	52	44	44	44
Employees	No.	**14,626**	**14,329**	**13,285**	**13,193**	**13,016**
Male	"	10,283	10,157	9,433	9,298	9,219
Female	"	4,343	4,172	3,852	3,895	3,797
Salaries and wages	$'000	26,320	27,583	27,617	29,859	28,016
Fuel and electricity used	"	2,663	2,860	2,960	2,852	2,983
Materials used	"	101,921	104,575	97,969	122,633	109,066
Value of products	"	159,888[2]	170,063	150,562	180,784	169,021

[1] Includes establishments whose main activity was the handling of fresh fish or other products; such establishments are excluded in later years. [2] Not strictly comparable with later years; this figure applies to value of production while those for 1956-59 are value of sales or shipments.

The most important products of the fish processing industry are canned salmon for British Columbia and frozen fillets of groundfish for the Atlantic Coast. The greatly reduced sockeye catch in 1959 had its effect on the canned salmon output which dropped in value to $12,103,000 from a high of $41,240,000 in 1958. While part of the great decline in the sockeye output was counterbalanced by increases in other species, particularly coho, the total value of all species canned was down by 41.3 p.c. compared with 1958.

The frozen groundfish fillet production on the Atlantic Coast (packaged fillets and blocks) was 142,086,000 lb. in 1959 as against 134,398,000 lb. in 1958 and 128,206,000 lb. in 1957. This production has increased almost constantly from year to year in the past decade, the major factor in its more recent growth being the production of fish blocks. Frozen groundfish fillets and fish blocks produced on the Atlantic Coast were valued at $32,835,000 in 1959, which made up about 26.4 p.c. of the total value for the fish processing industry in the area. Other products of importance include dried salted fish, pickled fish, canned sardines and lobster products.

6.—Pacific Coast Production of Canned Salmon, 1955-59

Species	1955	1956	1957	1958	1959
	QUANTITY (cases 48 lb.)				
Chum	124,769	204,071	239,641	230,636	133,129
Coho	185,722	212,115	193,058	131,527	213,105
Pink	831,253	363,933	751,609	451,802	458,596
Sockeye	249,365	320,096	228,452	1,074,304	256,171
Spring	18,097	13,713	10,480	10,704	15,230
Steelhead	1,589	1,253	1,318	1,205	1,256
Totals	**1,410,795**	**1,115,181**	**1,424,558**	**1,900,178**	**1,077,487**
	VALUE				
	$'000	**$'000**	**$'000**	**$'000**	**$'000**
Chum	1,966	3,925	4,490	3,792	2,662
Coho	5,250	6,783	5,497	3,997	7,919
Pink	15,740	7,761	15,763	9,437	11,372
Sockeye	9,304	12,990	9,265	41,240	12,103
Spring	337	361	242	252	360
Steelhead	39	32	38	31	45
Totals	**32,636**	**31,852**	**35,295**	**58,749**	**34,461**

7.—Atlantic Coast Production of Frozen Fillets and Fish Blocks, 1955-59

Area and Species	1955	1956	1957	1958	1959p
	QUANTITY				
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Maritimes	**58,455**	**64,228**	**65,834**	**69,639**	**71,714**
Cod	18,870	22,504	23,995	26,685	28,674
Haddock	19,080	20,227	18,567	16,593	19,868
Redfish	6,771	9,340	7,670	8,147	4,957
Flatfish	11,863	10,051	12,515	11,845	11,206
Other	1,871	2,106	3,087	6,369	7,009
Quebec	**4,099**	**7,368**	**10,243**	**10,784**	**11,791**
Cod	2,952	6,099	8,645	8,779	9,145
Other	1,147	1,269	1,598	2,005	2,646
Newfoundland	**58,843**	**61,895**	**52,129**	**53,975**	**58,581**
Cod	33,457	31,312	30,275	32,129	39,688
Haddock	16,493	19,619	12,304	8,377	7,971
Redfish	4,830	6,154	4,529	7,273	4,087
Flatfish	3,982	4,633	4,874	5,864	6,366
Other	81	177	147	332	469
Totals, Atlantic Coast	**121,397**	**133,491**	**128,206**	**134,398**	**142,086**
Cod	55,279	59,915	62,915	67,593	77,507
Haddock	35,716	39,921	30,917	24,987	28,076
Redfish	11,833	16,086	13,198	16,867	10,814
Flatfish	16,531	15,245	17,932	18,182	18,197
Other	2,038	2,324	3,244	6,769	7,492

7.—Atlantic Coast Production of Frozen Fillets and Fish Blocks, 1955-59—concluded

Area and Species	1955	1956	1957	1958	1959[p]
	Value				
	$'000	$'000	$'000	$'000	$'000
Maritimes	**13,041**	**12,495**	**15,056**	**17,940**	**17,678**
Cod	3,728	3,983	4,605	5,815	6,052
Haddock	4,324	3,759	4,727	5,116	5,773
Redfish	1,198	1,574	1,661	1,894	1,118
Flatfish	3,405	2,662	3,256	3,731	3,384
Other	386	517	807	1,384	1,351
Quebec	**765**	**1,150**	**1,667**	**2,001**	**2,294**
Cod	496	901	1,350	1,586	1,747
Other	269	249	317	415	547
Newfoundland	**11,439**	**11,881**	**10,052**	**11,508**	**12,863**
Cod	6,229	5,646	5,471	6,393	7,885
Haddock	3,207	3,703	2,416	1,986	1,972
Redfish	888	1,172	853	1,466	858
Flatfish	1,095	1,321	1,276	1,583	2,037
Other	20	39	36	80	111
Totals, Atlantic Coast	**25,245**	**25,526**	**26,775**	**31,449**	**32,835**
Cod	10,453	10,530	11,426	13,794	15,684
Haddock	7,561	7,477	7,151	7,107	7,818
Redfish	2,119	2,834	2,669	3,622	2,266
Flatfish	4,694	4,121	4,685	5,452	5,602
Other	418	564	844	1,474	1,465

The value of all fishery products processed or handled in Canada by processors, handlers or fishermen during 1959 reached $205,298,000 for the sea and inland fisheries, 12.1 p.c. lower than the 1958 level of $233,659,000. While Atlantic Coast seafish products rose to $123,655,000 from $113,896,000, the value of British Columbia fishery products declined by 30.9 p.c. to $67,067,000 from $97,016,000 in 1958 and the value of inland fishery products to $18,161,000 from $20,609,000.

8.—Value of All Products of the Fisheries, by Province, 1955-59

NOTE.—Figures for the years 1917-54 are given in the corresponding table of previous Year Books beginning with the 1922-23 edition. Totals for five-year intervals from 1870 are given in the 1956 edition, p. 597.

Province or Territory	1955	1956	1957	1958	1959[p]
	$'000	$'000	$'000	$'000	$'000
Newfoundland	27,990	29,374	26,750	25,746	31,675
Prince Edward Island	3,841	5,246	4,410	5,449	5,961
Nova Scotia	47,093	49,363	45,779	50,812	50,367
New Brunswick	20,420	22,830	22,293	24,623	28,367
Quebec	6,675	7,860	7,580	7,827	7,856
Ontario	7,631	8,920	7,928	8,180	5,475
Manitoba	6,044	6,426	5,929	6,844	6,689
Saskatchewan	1,617	1,766	2,010	2,339	2,596
Alberta	1,144	1,306	1,451	1,450	1,684
British Columbia	60,032	68,016	63,650	97,016	67,067
Northwest Territories	1,529	1,483	1,298	1,235	1,146
Totals[1]	**184,169**	**198,252**	**188,018**	**233,659**	**205,298**
Sea Fish	165,532	177,695	168,769	213,050	187,137
Inland Fish	18,637	20,557	19,249	20,609	18,161

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[1] Totals in this table differ from provincial totals because salted groundfish (except boneless) are based on sales rather than production; duplications for bloaters are also removed.

PART II.—FURS

Section 1.—The Fur Industry*

Several centuries of hunting and trapping have not seriously affected the capacity of Canada's stock of fur bearing animals to make a leading contribution to the world's requirements of furs of the highest quality. The rapid development of the country and the opening up of the western provinces during the latter part of the nineteenth and early twentieth centuries, together with improvements in transportation and subsequent settlement, caused the exhaustion of fur resources in the settled areas. More recently, the development of mining on a large scale over the Canadian Shield forced the trapper still farther northward. Nevertheless, the belt of Northern Canada extending across the Yukon and Northwest Territories, the northern parts of the Prairie Provinces, through northern Ontario and Quebec and into the Maritime Provinces and Newfoundland is one of the world's few remaining natural reserves for fine furs. It is quite probable that minerals and furs will continue to be the chief resources of this vast area as much of it is not suited to settlement or forest growth of commercial value.

It is realized that the fur wealth of the country is a very valuable asset, as it has been since the early days of settlement, and is capable of considerable development. Under well-planned conservation policies and by the imposition of closed seasons at appropriate times as well as by the establishment of natural preserves, the yield of wild fur is being maintained and even increased. On the other hand, the industry of fur farming is relatively new and much has still to be learned as to the best methods and techniques to be adopted. Yet its potentialities are such as to offer ample reward to those who are prepared to work steadily and intelligently toward the goal of raising animals with pelts at least equal to the best caught in their natural habitat.

The conservation of wild fur bearing animals is a matter coming under the jurisdiction of the respective provincial and territorial governments, although the Federal Government is also concerned with the conservation of fur and of all wildlife resources. The general policy with regard to the fur bearing animals follows two main lines—the regulation of the taking of animals by limitations of catch or closed season so as to prevent their extinction in districts where conditions provide a suitable habitat, and the provision of sanctuaries in strategic places to serve as reservoirs from which large areas of surrounding wild country may be restocked. Many of the most valuable fur bearing animals are subject to marked fluctuations in numbers. The periods of abundance and of scarcity recur with sufficient regularity to be called cycles. Such cycles have an important bearing upon the fur trade generally and more particularly upon the well-being of that large portion of the Indian and Eskimo population which depends upon fur trapping for much of its livelihood.

The fur industry contributes about $25,000,000 annually to Canada's export trade. About two-thirds of the total production of pelts goes outside the country, principally to the United States and the United Kingdom. Before World War II, the London market took about 80 p.c. of the total production of Canadian fox farms and also large quantities of every other kind of fur. However, when the War started, the London market was practically lost and other outlets had to be explored. United States fox breeders feared their market would be flooded with imported silver fox pelts and, at their request, a quota permitting the import of 58,000 units from Canada was instituted in the 1939-40 season, a unit consisting of a leg, head, tail or piece. Before the opening of the quota, United States interests came to Canada, purchased quantities of low-grade fox pelts and cut off the paws, heads and tails, thus making seven units from each fox. When the quota opened the pieces were shipped and the quota filled overnight, preventing the export of further silver fox that season. This situation was soon remedied, however, by the raising of the quota to 70,000 pelts. Since Canada's yearly production at that time was approximately 300,000 pelts, only the better grades were exported and the consequent competition had the effect of raising the quality of foxes produced.

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* Prepared by W. M. Ritchie, Chief, Fur Inspection and Grading Services, Department of Agriculture, Ottawa.

During the 1930's, Norwegian agents came to Eastern Canada to purchase large numbers of live foxes and by 1939 Norway was marketing about twice Canada's production of fox pelts yearly. It was from one of the live animals purchased in Quebec that the platinum fox originated. Canada's registration system for pedigreed stock required the destruction of any fox showing white above the hocks—otherwise, Canadian breeders could have had the platinum fox years before. Norwegian breeders, not having a registration system, could retain any type of fox regardless of marking. It was in 1933 that the first platinum fox was born and from that animal the first litter was born in 1934. In January 1940, 400 Norwegian platinum fox pelts were offered for sale by auction in New York. The entire collection was sold for an average price of $548; the top price for one pelt was $11,000. The same pelt today would realize about $12.

By the end of the War the Scandinavian countries had accumulated over a million fox pelts and to market them they entered into compensation or barter deals with countries that before the War had purchased large quantities of Canadian fox pelts—France, Italy, Belgium and Holland. These compensation deals averaged about $7 a pelt; in Canada it cost approximately $30 to produce a fox. Currency restrictions, the lack of dollars and these barter deals were the main factors that brought about the downfall of the silver fox industry. Today Canada's annual production is about 2,000 pelts.

Because fur is a luxury item, highly international in character, the fur trade is particularly susceptible to world economic and political conditions. It was inevitable, then, that World War II and its aftermath would greatly disarrange the fur market and that the market would improve with the later upswing in world economic conditions. When the War began it was feared that the fur market would collapse as it had in 1914 when blanket beaver dropped to 75 cents a pelt and muskrat to five cents a pelt. But this did not happen—in fact the best market enjoyed during the war years was in the 1943-44 season when all furs, long-haired and short-haired alike, were in demand and the price received for red fox averaged $16, for fisher $70, lynx $50, marten $44, standard silver fox $33, platinum fox $70, blue fox $37, cross fox $21 and white fox $34, while the top price for beaver was $77.50. Although the countries that traditionally produced the most fur—the Soviet Union, the United States, Canada, the United Kingdom, China and Japan—retained their position in that respect, a new trend for the industry developed as a result of wartime economic complexities. The famous fur auction of Leipzig no longer played its important role of prewar days. Because the fur dealers of the world desired most of all to sell their pelts for dollars, New York City took on such importance as a market that it became in many respects the fur capital of the world.

In 1947 and 1948 the important prewar fur outlets in Europe were closed; those countries were spending their money rebuilding homes and factories. The other important outlet, the United States, provided a limited market since only the kinds of fur not domestically produced were imported. Nevertheless, producing countries abroad, needing dollars for reconstruction and for replacing worn-out equipment, flooded the New York market with furs. With this large accumulation of pelts being offered for sale and the unstable market throughout Europe, prices started to decline, reaching a low in the 1953-54 season when beaver averaged $10.57, fisher $17.50, lynx $3.62, marten $7.00, silver fox $8.00, platinum fox $9.75, blue fox $9.70, cross fox $1.87, red fox 78 cents and white fox $11.00. During this period, a number of countries with which Canada had been dealing during the war years imposed restrictions on imports of luxury commodities. Such luxury commodities included furs and, with currency restrictions, the marketing of pelts became quite a problem for the Canadian fur industry.

In comparatively recent years there has been a notable development in the fur ranching industry pioneered by Canada. The successful domestication of the silver fox, mink and other fur bearing animals of high pelt value has introduced a new and profitable branch of animal husbandry, which now accounts for about 62 p.c. of the value of Canada's animal fur pelt production. Capital investment in the 2,200 fur farms, including the fur bearing animals, land and buildings, amounts to approximately $40,000,000. The value of the 5,370,580 pelts marketed in the 1958-59 season, the latest for which complete figures are available, was $25,801,395, of which wildlife pelts caught in their native habitat accounted for $9,707,035 and pelts raised on fur farms for $16,094,360.

Fur farming is carried on in all provinces. An experimental fox ranch operated by the federal Department of Agriculture at Summerside in Prince Edward Island specializes in the breeding, feeding, housing and general care of fox and mink. Although the fox was the first type to be raised in captivity, many other kinds of fur bearing animals are now being raised—mink, marten, fisher, rabbit and chinchilla.

Mink farms are by far the most numerous. Not only are the fur farms producing the original dark brown mink but, through a number of mutations that have occurred genetically, mink is being offered in many colours that are readily accepted on the markets of the world. These mutations, which have occurred over the past twenty years in great variety, and especially during the past five years, run the gamut from dark to light shades in Silverblu, Pastel (honey-brown), Aleutian (gunmetal with bluish aspects), Sapphire (metallic blue) and pure White or almost pure White. Of course, there is a whole variety of dilutions or concentrations of these various colours which puzzle even the expert breeder, and not all colours are desirable or marketable. There have been several mutations which were quite strong-furred but which produced awkward colour patterns, such as the Koh-i-nur (essentially a black-and-white animal with the black, in the best instances, in the form of a cross) and the so-called Blue-Frost type (a dark mink with some silver hairs and with a lighter under-fur). These types were difficult to match in coat-making and lack of enthusiasm among buyers brought prices down and soon made their production unprofitable. However, some of the factors in different settings proved valuable. The Blue-Frost inheritance, when transferred to the Silverblu and to the Sapphire, became known as Breath-of-Spring. It was a silvering and paling of an already silver-bluish fur which became quite desirable to the trade and therefore higher priced than the plain Silverblu and plain Sapphire. The Koh-i-nur mink, by continual selection, eliminated most of the black and became the White mink. It might have a black tail or a few very small black spots on its head but, because both of these appendages are dispensed with in making a coat, it is treated as a pure White mink and the prices have been exceptionally high.

During the ten years 1951-60, the fur market was dominated by ranch-raised mink and long-haired furs were very much neglected. In 1951, the world mink crop was estimated at 3,500,000 pelts and the market opened with prices on all types 20 to 40 p.c. higher than the opening prices of the previous year. Some of the highs obtained in New York were $128 for Aleutian, $105 for White, $98 for Breath-of-Spring, $86 for Royal Pastel and $64 for Standard. The first sale of Sapphire mink was made in 1957, the top bundle selling for $350 a skin. This was the highest amount ever paid for ranch mink. In 1952-54, prices were much easier than in 1951 and then in 1955, partly because there was no carryover from the previous season, the average price of all mink sold went up to $26.28. The first sale of Winterblu was made that year, the top lot bringing $340 per pelt. In 1956, there was an active demand for all types and opening prices were 5 to 10 p.c. higher than early sales the previous year. In 1957-59, prices of dark mink advanced from 33 to 45 p.c. over 1956 prices as a result of increased demand for that type and lower production. In 1960, production of ranch mink throughout the world continued to increase. Contrary to predictions, the estimated world crop of 12,500,000 pelts, through the combination of higher production and foreign imports, did not bring about a drop in prices. An upsurge in the popularity of fur-trimmed garments and millinery created an expanded market for mink which absorbed most of the increase and left few pelts on the market at the end of the season.

It may be interesting to dispel the popular misconception that the cost of producing a mink is but little and the realization from these pelts is high by mentioning some of the numerous problems confronting the Canadian rancher. During the past fifteen years the cost of feed has risen rapidly and is continuing to do so. For example, horsemeat is a vital part of the mink diet. Not many years ago, the rancher paid as little as $5 for a horse that had outlived its usefulness and sold the hide for the same amount, so that his only expense was in the processing. Today, the average cost of a horse is $70 and the rancher gets about $6 for the hide. By the pound, horsemeat costs about 14 cents. Other food costs—cereal, liver, etc.—have about quadrupled in four years. Prices of other materials such as wire for pens, and refrigerator units are estimated to have quadrupled in the past ten to fifteen years. Labour costs are much higher than they were. The total cost of producing a mink in 1932 was about $5, by 1942 it had risen to about $8 and today it is estimated to be $15 to $16. When it cost $5 to raise a mink, the average selling price was not much above that figure. At today's estimated production cost, many ranchers lose money on their standard mink and must make up the loss on sales of male animals and mutations.

In the early postwar years, the industry and the Government alike recognized the need for initiating some promotional activities to bolster the sale of Canadian furs abroad. At a meeting of fox and mink breeders and government officials in Ottawa in 1947, the Federal Government agreed to sponsor a fur exhibit at the Fur and Leather Fair to be held in Basle, Switzerland, in the spring of 1948—Switzerland being the only country in Europe at the time that had dollars to spend. This exhibit was a co-operative effort. The Department of Agriculture was in charge of the display but all arrangements were made by the Department of Trade and Commerce and the fur collection was lent by the fur organizations and members of the industry. In the years since then, displays of furs have been prepared for international trade fairs at Paris, London, Milan, Brussels, Basle and Lausanne. In June 1960, a successful two-day Canadian fur and fashion show was held in Brussels, the first enterprise of this kind to be attempted. Moreover, the Canadian exhibits at the Paris and Brussels International Trade Fairs that year were devoted almost exclusively to furs.

Other Federal Government departments have given valuable assistance in the fur displays abroad for various reasons. The Department of Northern Affairs and National Resources, which is responsible for the welfare of Canadian Eskimos, is most anxious to secure a wider market for Canadian Arctic fox and thereby bring more revenue to this small but important segment of the population. Accordingly, the Department provided a number of choice pelts which were fashioned by craftsmen into an extraordinarily beautiful evening cloak. The cloak was a feature presentation in the 1960 fur displays and received much attention in European fashion magazines. The Department also provided pelts for the manufacture of a handsome marten cape, also featured in the European displays. The Indian Affairs Branch of the Department of Citizenship and Immigration is interested in helping Indian trappers to increase their income and, in conjunction with the Department of Trade and Commerce, has arranged for advertisements of Canadian beaver, in full colour, to be placed in leading fashion magazines of Germany, France and Italy. In most of these promotional efforts, it has been the function of the Department of Agriculture to plan and co-ordinate the arrangements. Recently the fur business itself has taken an increasing interest in advertising in other countries. The Canadian Mink Breeders in 1960 carried out an attractive promotional effort in Peru and Mexico with a view to stimulating interest in Canadian furs in those countries. By arrangement with Canadian Pacific Air Lines, Limited and a Montreal department store, a valuable collection of furs was shown in Lima and Mexico City. Efforts of this nature are an indication of maturity and a healthy, forward-looking condition within the industry.

The concentrated attention on promotional advertising in other countries has two closely connected objectives—to establish Canada's reputation as a major source of high quality furs and, by so doing, to attract increasing numbers of foreign buyers to Canadian fur auctions. It is particularly encouraging, therefore, to note that 118 European buyers from nine countries came to the first large sales in 1960, roughly double the number attending the previous year. While the Government has concentrated on building up the market in Europe, fur displays at fairs on that Continent have had some effect on sales to the United States. Several leading department stores in the southern States have been in communication with the Canadian Trade Commissioner in New Orleans with a view to presenting Canadian furs and fashions. Exports of raw and dressed furs in 1958 were approximately $2,000,000 higher than those of 1957, and exports in 1959 were about $1,200,000 above those of 1958. It seems reasonable to assume that part of this increase can be attributed to promotional effort.

Section 2.—Provincial and Territorial Fur Resources and Management

As stated in Section 1, most of the fur resources of the provinces of Canada are under the administration of the respective provincial governments. Exceptions include those resources within the boundaries of the National Parks and the Indian reserves, and the fur resources of the Yukon Territory and the Northwest Territories, all of which are under the administration of the Federal Government. The Canadian Wildlife Service of the Department of Northern Affairs and National Resources (see pp. 39-41) is responsible for all Federal Government interests in wildlife resources except for those activities closely related to Indian affairs. The service co-operates with provincial governments and other agencies concerned and handles federal interests in relevant national and international problems.

Detailed descriptions of provincial and territorial fur resources and management activities are given in the 1957-58 Year Book, pp. 616-622.

Section 3.—Fur Statistics

Subsection 1.—Production of Furs*

Total Fur Production.—Early records of raw fur production were confined to the decennial censuses when account was taken of the number and value of pelts obtained by trappers. In 1920 the Dominion Bureau of Statistics commenced an annual survey of raw fur production. For a number of years the statistics were based on information supplied by the licensed fur trappers. More recently annual statements based on royalties, export tax, etc., have been made available by the provincial game departments (except Prince Edward Island), and these statements are used in the preparation of the statistics issued annually by the Bureau. Figures for Prince Edward Island are based on returns supplied to the Dominion Bureau of Statistics by fur dealers in that province.

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* Revised in the Agriculture Division, Dominion Bureau of Statistics.

1.—Pelts of Fur Bearing Animals Produced and Percentage Sold from Fur Farms, Years Ended June 30, 1941-60

Year Ended June 30—	Pelts		Percentage of Value Sold from Fur Farms[1]	Year Ended June 30—	Pelts		Percentage of Value Sold from Fur Farms[1]
	Number	Value			Number	Value	
		$				$	
1941	7,257,337	21,123,161	26	1951	7,479,272	31,134,400	36
1942	19,561,024	24,859,869	19	1952[2]	7,931,742	24,215,061	42
1943	7,418,971	28,505,033	24	1953	7,568,865	23,349,680	43
1944	6,324,240	33,147,392	28	1954	6,274,727	19,287,522	49
1945	6,994,686	31,001,456	31	1955	9,670,796	30,509,515	43
1946	7,593,416	43,870,541	30	1956	7,727,264	28,051,746	56
1947	7,486,914	26,349,997	37	1957	6,919,724	25,592,130	57
1948	7,952,146	32,232,992	37	1958	6,440,319	26,335,109	60
1949	9,902,790	22,899,882	33	1959	5,370,531	25,800,555	62
1950	7,377,491	23,184,033	34	1960p	6,000,298	31,203,451	60

[1] Approximate. [2] Wildlife pelts for Newfoundland included from 1952.

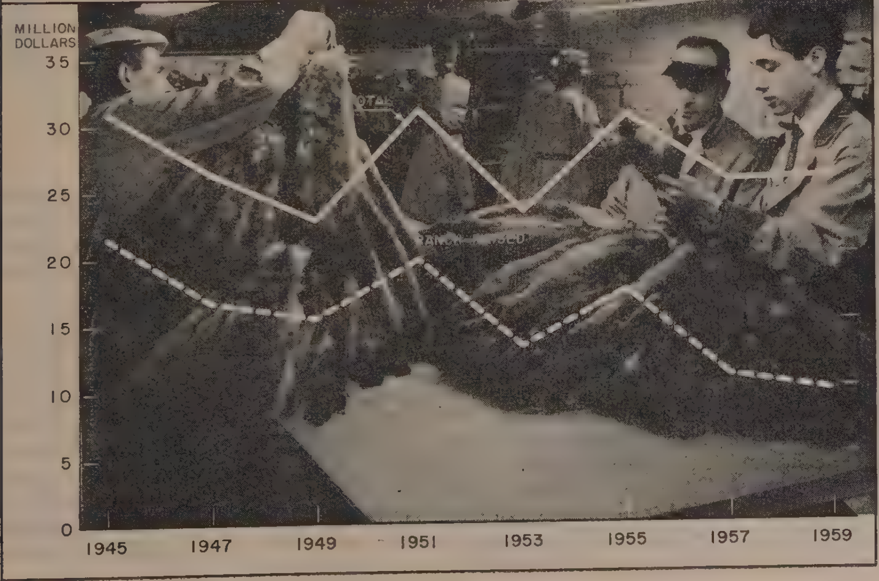
Ontario continued to lead the provinces in value of fur production, accounting for 25 p.c. of the total in the 1959-60 season. Manitoba followed with 17 p.c., British Columbia with 16 p.c., Alberta 15 p.c., Saskatchewan 10 p.c., Quebec 9 p.c., the Atlantic Provinces 5 p.c., and the Yukon and Northwest Territories combined 3 p.c.

2.—Pelts of Fur Bearing Animals Produced, by Province, Years Ended June 30, 1959 and 1960

Province or Territory	1959			1960p		
	Pelts	Value	Percentage of Total Value	Pelts	Value	Percentage of Total Value
	No.	$		No.	$	
Newfoundland	54,154	414,482	1.6	54,728	580,734	1.9
Prince Edward Island	4,403	61,367	0.2	3,542	54,151	0.2
Nova Scotia	66,131	521,379	2.0	67,083	593,025	1.9
New Brunswick	36,138	218,346	0.8	35,430	200,155	0.7
Quebec	343,658	2,290,163	8.9	396,648	2,672,147	8.6
Ontario	945,794	7,078,603	27.4	928,640	7,974,547	25.6
Manitoba	799,317	4,805,355	18.6	675,807	5,180,127	16.6
Saskatchewan	981,202	2,571,204	10.0	987,837	3,263,349	10.5
Alberta	1,343,590	3,210,239	12.4	1,661,388	4,766,217	15.3
British Columbia	456,392	3,753,404	14.5	767,646	4,938,540	15.8
Yukon Territory	103,604	67,571	0.3	182,982	158,232	0.5
Northwest Territories	236,123	808,154	3.1	238,539	821,975	2.6
Canada[1]	**5,370,531**	**25,800,555**	**100.0**	**6,000,298**	**31,203,451**	**100.0**

[1] Totals include a few pelts and their values not allocated to a province or territory.

VALUE OF FUR PELTS TAKEN IN THE WILD
AND RANCH-RAISED, YEARS ENDED JUNE 30, 1945-59



The total number of pelts taken during 1959-60 was 6,000,298, 12 p.c. more than in the previous year. The value of pelts taken increased even more markedly to $31,203,451, which is an increase of 21 p.c. The ten principal kinds of pelts taken according to their value were: 1,054,741 ranch mink pelts valued at $18,715,582; 344,766 beaver pelts at $4,732,573; 169,631 wild mink pelts at $2,948,404; 1,562,617 muskrat pelts at $1,303,661; 2,241,771 squirrel pelts at $1,032,937; 40,408 lynx pelts at $704,613; 15,296 otter pelts at $384,953; 14,457 white fox pelts at $353,366; 276,111 ermine pelts at $268,612 and 29,226 marten pelts at $194,374. These types accounted for 98.2 p.c. of the total value of pelts produced.

3.—Pelts of Fur Bearing Animals Taken, by Kind, Years Ended June 30, 1959 and 1960

Kind	1959			1960p		
	Pelts	Total Value	Average Value	Pelts	Total Value	Average Value
	No.	$	$	No.	$	$
Badger	348	1,002	2.88	1,466	7,819	5.33
Bear, white	413	28,350	68.64	544	30,077	55.29
Bear, other	493	3,276	6.65	411	2,944	7.16
Beaver	328,584	3,353,031	10.20	344,766	4,732,573	13.73
Coyote or prairie wolf	2,533	7,813	3.08	6,948	34,121	4.91
Ermine (weasel)	255,139	246,982	0.97	276,111	268,612	0.97
Fisher	4,850	84,038	17.33	6,462	117,876	18.24
Fox, blue	213	1,687	7.92	175	1,474	8.42
Fox, cross and red	15,578	27,796	1.78	17,616	57,414	3.26
Fox, silver	266	1,546	5.81	383	2,035	5.31
Fox, white	26,539	529,886	19.97	14,457	353,366	24.44
Fox, not specified	24	24	1.00	34	66	1.94
Lynx	14,165	198,350	14.00	40,408	704,613	17.44
Marten	18,047	109,788	6.08	29,226	194,374	6.65
Mink, standard	270,054	4,453,357	16.49	341,239	6,116,704	17.92
Mink, mutation	859,182	13,826,366	16.09	883,133	15,547,282	17.60
Muskrat	2,171,739	1,846,277	0.85	1,562,617	1,303,661	0.83
Otter	15,120	348,477	23.05	15,296	384,953	25.17
Rabbit	96,720	50,858	0.53	175,731	109,149	0.62
Raccoon	14,081	26,698	1.90	25,015	53,158	2.13
Skunk	1,744	1,422	0.82	2,148	1,875	0.87
Squirrel	1,262,006	499,238	0.40	2,241,771	1,032,937	0.46
Wildcat	778	2,915	3.75	1,336	3,820	2.86
Wolf	1,112	18,230	16.39	538	7,199	13.38
Wolverine	453	7,761	17.13	503	7,955	15.82
Other	10,350r	125,387r	...	11,964	127,394	...
Totals	**5,370,531r**	**25,800,555r**	...	**6,000,298**	**31,203,451**	...

Fur Farm Production.—Fur bearing animals were first raised in Canada on farms in Prince Edward Island about 1887 and in Quebec in 1898; today fur farming is carried on in all the provinces. In 1959 mink accounted for 92 p.c. of the total fur bearing animals on farms and chinchilla for 6 p.c. Small numbers of raccoon, marten, fisher, fitch, nutria and others are also reared.

There was a slow and steady increase in the number of farms until 1920 when 587 were reported, followed by a period of more rapid growth to 1938 when the number reached 10,454 with a production value of $6,500,000. During the war years many fur farms went out of production and although prices rose considerably after the War, operating costs increased and the number of fur farms, particularly those conducted in conjunction with other farming operations, continued to decrease. By 1959 only 2,458 farms reported but the value of their production was $18,843,000. Although there were 114 fewer farms in 1959 than in 1958, the number of animals on such farms increased from 500,774 to 538,826 and the number of pelts taken from 993,133 to 1,066,705. Fox pelts continued to decline but there were 71,958 more mink pelts sold in 1959 than in 1958. Chinchilla also showed an increase from 8,336 to 8,558.

Ontario was the leading province in the value of mink produced in 1959 with 284,740 pelts valued at $5,115,685. British Columbia was in second place with 225,829 pelts valued at $4,085,458, followed by Manitoba with 205,313 pelts at $3,514,006; Alberta, 135,343 at $2,684,500; Saskatchewan, 74,654 at $1,192,669; and Quebec, 57,506 at $1,008,673. In each of the other provinces the value of mink production was under $1,000,000.

4.—Fur Farms and Value of Pelts Produced Thereon, by Province, 1958 and 1959

Province	Fur Farms at Year End		Value of Pelts Produced on Fur Farms	
	1958	1959	1958	1959
	No.	No.	$	$
Newfoundland	38	36	362,327	500,517
Prince Edward Island	23	22	60,782	53,721
Nova Scotia	97	102	390,739	477,961
New Brunswick	60	47	84,699	96,008
Quebec	328	333	951,358	1,037,603
Ontario	696	686	4,633,400	5,143,372
Manitoba	306	271	3,309,816	3,514,190
Saskatchewan	162	158	954,819	1,197,058
Alberta	329	315	2,013,582	2,695,834
British Columbia	533	488	3,331,710	4,126,460
Totals	**2,572**	**2,458**	**16,093,520[1]**	**18,842,976[1]**

[1] Includes some pelts not valued by province.

5.—Number of Farms Reporting Fur Bearing Animals, by Kind, as at Dec. 31, 1958 and 1959

Kind	1958		1959	
	Farms	Animals	Farms	Animals
	No.	No.	No.	No.
Fox	94	1,544	84	1,783
Mink	1,724	459,976	1,661	497,132
Chinchilla	711	35,671[r]	620	34,219
Nutria	101	3,341[r]	142	5,465
Other	38	242[r]	27	227

6.—Number and Value of Pelts Produced on Fur Farms, by Kind, 1958 and 1959

Kind	1958		1959	
	Pelts	Value	Pelts	Value
	No.	$	No.	$
Fox	**1,248**	**13,455**	**1,183**	**14,689**
Blue	40	623	43	653
Platinum	493	5,870	501	6,722
Silver	706	6,920	637	7,304
Unspecified	9	42	2	10
Mink	**982,783**	**15,968,133**	**1,054,741**	**18,715,582**
Standard	123,601	2,141,767	171,608	3,168,300
Grey	116,702	1,390,543	67,535	883,501
Dark blue	85,763	1,527,303	74,393	1,447,481
Light blue	242,765	3,788,955	234,857	3,921,374
Brown	280,899	4,803,929	350,472	6,260,889
Beige	59,862	1,000,183	63,642	1,309,267
White	73,191	1,315,453	92,234	1,724,770
Chinchilla	**8,336[r]**	**111,932[r]**	**8,558**	**112,705**
Nutria	**749**	..	**2,206**	..
Other	**17**	..	**17**	..
Totals	**993,133[r]**	**16,093,520[r]**	**1,066,705**	**18,842,976**

Subsection 2.—Marketing of Furs

Montreal, Que., is the leading Canadian fur mart although auction sales are also held at Vancouver, B.C., Edmonton, Alta., Regina, Sask., Winnipeg, Man., and North Bay, Ont. The Saskatchewan Government maintains a Fur Marketing Service at Regina to assist producers in that province.

Grading.—The grading of furs to secure uniformity was introduced in 1939 by the federal Department of Agriculture so that furs may be purchased by grade without the necessity of buyers from other countries personally examining the pelts. Grading offers many advantages to the producer as well as to the trade in general. It educates the rancher as to the proper value of his pelts and creates an incentive to improve the quality of the product; it furnishes guidance in the planning of future matings, aids in raising the standard of quality of the entire crop of pelts and helps in advancing the level of prices for high-quality pelts.

Exports and Imports.—The Canadian fur trade, both export and import, is mostly in undressed furs, the value of dressed and manufactured furs going out of or coming into Canada being a comparatively small proportion of the total. Canadian fur exports consist largely of those produced in greatest abundance, mink being the most valuable followed by beaver, fox, muskrat and squirrel. Furs such as Persian lamb, mink, certain types of muskrat, fox, raccoon, Kolinsky, and sheep and lamb make up the major portion of the imports.

Exports and imports of all furs to and from the United States, the United Kingdom and all countries are given for the years 1958 and 1959 in Table 7.

7.—Exports and Imports of Furs, by Kind, 1958 and 1959

Kind of Fur	1958			1959		
	United Kingdom	United States	All Countries	United Kingdom	United States	All Countries
	EXPORTS					
	$	$	$	$	$	$
Undressed—						
Beaver	1,009,545	2,185,193	3,575,517	1,064,820	2,441,770	4,122,227
Ermine	154,323	89,567	243,890	163,463	45,379	208,842
Fisher	60,628	54,892	132,860	44,210	73,205	127,832
Fox, all types	27,569	939,696	973,373	9,799	1,454,845	1,466,396
Lynx	27,055	122,019	158,815	56,017	246,643	324,883
Marten	33,550	125,896	159,546	64,653	83,221	148,286
Mink	990,435	14,484,035	15,843,276	1,591,584	13,541,794	15,595,540
Muskrat	961,227	181,433	1,167,920	929,452	112,115	1,046,646
Otter	1,275	32,490	33,765	12,075	72,534	97,254
Rabbit	—	47,426	47,426	2,055	66,951	69,515
Raccoon	335	12,447	14,900	—	13,068	13,268
Seal	—	3,880	3,880	—	—	—
Skunk	6,193	2,954	9,147	1,416	875	2,291
Squirrel	632,755	470	633,225	516,683	63	517,276
Weasel	22,808	36,520	59,328	39,982	23,788	63,770
Wolf	6,152	9,718	15,870	14,321	41,298	56,567
Other	47,857	177,783	248,863	25,076	240,240	267,216
Dressed—						
Fox	—	400	400	—	70	70
Other	239,456	305,106	1,129,097	91,326	870,623	1,379,372
Manufactured	15,393	475,909	537,918	15,057	576,483	640,070
Totals	**4,236,556**	**19,287,834**	**24,989,016**	**4,641,989**	**19,904,965**	**26,147,321**

7.—Exports and Imports of Furs, by Kind, 1958 and 1959—concluded

Kind of Fur	1958			1959		
	United Kingdom	United States	All Countries	United Kingdom	United States	All Countries
	IMPORTS					
	$	$	$	$	$	$
Undressed—						
China and Jap mink	6,634	2,473	21,315	104,608	5,700	556,626
Fox	185,755	66,396	374,438	401,821	79,151	731,811
Kolinsky	105,375	8,409	572,262	26,375	125,844	343,376
Mink	254,848	5,238,810	5,808,010	421,773	5,057,943	6,224,174
Muskrat	15,190	1,582,729	1,637,408	24,266	2,091,795	2,131,887
Persian lamb	3,822,033	4,603,642	9,484,754	3,125,751	4,581,252	8,999,090
Rabbit	—	62,941	136,869	—	44,034	147,413
Raccoon	—	—	—	—	543,277	543,277
Sheep and lamb	—	—	—	16,924	149,369	297,215
Squirrel	36,650	51,363	102,001	25,670	35,107	77,403
Other	230,190	726,292	1,749,378	55,909	696,148	826,073
Dressed—						
Rabbit	—	8,028	52,595	—	9,389	30,127
Sheep skins	3,117	96,446	100,571	1,264	50,576	51,840
Hatters furs	159,419	250,054	881,494	163,920	225,830	931,872
Other	371,672	2,259,294	3,000,278	257,321	2,577,800	3,009,148
Manufactured	36,331	555,676	621,516	37,538	699,569	822,859
Totals	**5,227,214**	**15,512,553**	**24,542,889**	**4,663,140**	**16,972,784**	**25,724,191**

Subsection 3.—The Fur Processing Industry*

The rather general term 'fur processing' includes the fur dressing and dyeing industry and the fur goods industry. The former is concerned with the dressing or dyeing of pelts on a custom basis and the latter is a manufacturing industry that makes up fur goods such as coats, scarves and gloves.

In 1959 the number of skins treated was 7,294,823, of which muskrat comprised 49 p.c., Persian and other types of lamb 11 p.c., mink 18 p.c., squirrel 5 p.c. and rabbit 3 p.c.

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* Prepared in the Industry and Merchandising Division, Dominion Bureau of Statistics.

8.—Principal Statistics of the Fur Dressing Industry, 1955-59

Item		1955	1956	1957	1958	1959
Establishments	No.	18	16	16	14	15
Employees on Salaries—						
Male	No.	92	97	102	75	82
Female	“	24	19	18	15	15
Employees on Wages—						
Male	No.	876	777	782	680	766
Female	“	170	159	157	138	130
Salaries paid	$	538,703	600,687	748,838	485,254	612,446
Wages paid	$	2,756,638	2,655,259	2,636,590	2,439,445	2,799,973
Cost of materials used (dyes, chemicals, etc.)	$	1,121,805	1,057,850	1,248,961	895,585	1,253,798
Pelts treated	No.	9,762,062	9,119,334	8,960,044	8,305,294	7,294,823
Amount received for treatment of furs	$	6,498,292	6,241,696	6,299,336	5,508,408	6,503,695

The major output of the fur goods industry is ladies' fur coats; in 1959 the number was 184,888 valued at $44,231,510. Principal statistics of the industry for 1955-59 are given in Table **9**.

9.—Principal Statistics of the Fur Goods Industry, 1955-59

Item		1955	1956	1957	1958	1959
Establishments	No.	558	522	540	493	480
Employees on Salaries—						
Male	No.	1,015	995	1,007	891	859
Female	"	257	243	226	227	238
Employees on Wages—						
Male	No.	2,369	2,199	2,214	1,980	2,000
Female	"	1,378	1,214	1,289	1,228	1,164
Salaries paid	$	4,470,610	4,490,164	4,727,107	4,858,051	4,812,186
Wages paid	$	9,652,509	9,675,793	10,307,339	10,074,811	10,551,044
Cost of materials used	$	38,389,138	39,044,908	38,988,557	37,667,750	38,202,979
Value of factory shipments	$	60,349,381	61,126,085	62,187,649	61,124,191	62,623,385

CHAPTER XIV.—MANUFACTURES

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

This Chapter deals with manufacturing in Canada in three Parts. Part I reviews the manufacturing situation during 1959. Part II provides general statistical analyses including manufacturing statistics from 1917; detailed treatment of production under various groupings and individual industries; and principal factors in manufacturing production such as capital expenditures and size of establishment. Part III deals with the provincial and local distribution of manufacturing production.

Figures for 1959 were available at the time of going to press for most of the tables of Part II, although certain analyses, such as principal commodities produced and manufactures classified by origin and type of ownership, were not yet complete and 1958 is given as the latest year. Similarly, 1958 is the latest year for all provincial and municipal analyses contained in Part III.

PART I.—REVIEW OF MANUFACTURING

Canada is no longer on the fringes of industrialization but ranks among the world's most important manufacturing countries. The rate of expansion throughout the years has been phenomenal but in the past generation alone Canada has changed from a country producing and exporting mainly primary products to one that is increasingly producing and exporting manufactured goods. Today, manufactures account for about 26 p.c. of the value of all goods and services produced and employ a like percentage of the total labour force. An outline of this development, particularly during the postwar period, is given in the 1960 Year Book (pp. 657-660) together with a more detailed review of the manufacturing situation in 1957-58 when a moderate recession changed the pattern of growth.

In 1959, manufacturing production recovered from that recession. Selling value of factory shipments at $23,311,601,481, value added by manufacture at $10,320,962,881 and salaries and wages paid at $5,073,073,706 were all the highest on record. The number of employees was also higher in 1959 than in 1958 but fell short of the record attained in 1957 by 4.1 p.c. It is of interest to note that the value added by manufacture, which is the real measure of manufacturing production, was over the $10,000,000,000-mark for the first time in 1959.

Compared with 1958, the value of factory shipments in 1959 increased 5.2 p.c., salaries and wages 5.6 p.c., value added by manufacture 5.4 p.c. and volume of production 6.6 p.c. The latter advance was accomplished with an increase of only 1.1 p.c. in the number of persons employed, continuing the trend of recent years for the same volume of output to be produced with fewer employees. Since 1949 the physical volume of manufactured products increased 50.0 p.c. and the number of persons employed only 11.3 p.c. The increase in salaries and wages paid in 1959 resulted partly from the greater number of employees and partly from the continuing advance in earnings, a trend common to all other sectors of the economy.

An important factor in the recovery that took place during 1959 was the continued high spending on capital goods such as construction and machinery and equipment of all kinds. Total investment in capital goods amounted to $8,411,000,000, an increase of $47,000,000 over 1958. However, spending on machinery and equipment was $79,000,000 higher and spending on construction projects $32,000,000 lower, which had the effect of stimulating industries producing electrical and other machinery but moderately depressing industries producing building materials; in the case of the lumber industry, however, an increase in exports of planks and boards and veneer and plywood counterbalanced a decline in domestic spending for construction purposes, resulting in a net increase of 3.5 p.c. in the volume of wood products manufactured. Another stimulating factor in 1959 was the impact on the consumer goods industries of the increase of about 394,000 in population, with a continuing rise in wages, salaries and supplementary labour income.

Export demand for Canadian manufactured products was another strong factor in stimulating the 1959 recovery. Exports of partly manufactured products at $1,453,900,000 were $138,400,000 higher than in 1958 and exports of fully manufactured goods at $1,860,600,000 were $84,100,000 higher. The increase in exports of both partly and fully manufactured products amounted to 7.2 p.c. There were substantial improvements in exports of pulp, veneer and plywood, newsprint, whisky, farm implements and machinery, nickel, copper and its products, crude artificial abrasives, and synthetic rubber and plastic manufactures. Moderate increases were reported for timber and lumber, aluminum and its products, fertilizers, lead and its products, non-farm machinery and uranium ores and concentrates. At the same time, declines occurred in a number of major export items including red cedar shingles, wheat flour, zinc, automobile parts and aircraft. The decline in exports of aircraft was particularly sharp, from $109,112,783 in 1958 to $24,960,067 in 1959, the result of a 25-p.c. drop in the volume of output of the aircraft industry.

As already mentioned, the physical volume of production for manufacturing as a whole reached an all-time high in 1959, increasing 6.6 p.c. after a drop of 1.5 p.c. in 1958 and of 1.5 p.c. in 1957. Durable goods rose 6.9 p.c. and non-durable goods 6.4 p.c. Since the non-durable goods industries were not affected by the downturn in production in 1958, the rising volume of 1959 advanced these industries to almost the same level as durable goods; in 1957 the indexes for non-durable and durable goods were 139.7 and 146.7, respectively, while in 1959 they were about the same—150.4 and 149.5. The total index for manufacturing in 1959 was 150.0. In the years since the end of the Second World War the durable goods industries experienced an almost uninterrupted expansion in volume of production, the only exceptions being 1954, 1957 and 1958. Despite steady postwar expansion, the non-durable goods sector recorded an increase in volume of only 54 p.c. between 1946 and 1956 while durable goods increased 92 p.c. This gap was narrowed between 1957 and 1959 so that for the whole period of 1946-59 durable goods expanded 87 p.c. and non-durable goods 67 p.c.

All non-durable goods industries except clothing operated at higher levels in 1959. Rubber goods industries increased 17.4 p.c., textiles 13.2 p.c., products of petroleum and coal 11.4 p.c., miscellaneous industries 10.2 p.c. and increases in the other groups (see

Table 7) ranged from 7.6 p.c. for paper and paper products to 3.5 p.c. for foods. Clothing decreased 1.1 p.c. Similarly, all durable goods industries, with the exception of transportation equipment, reported increased volume. Iron and steel products recorded the highest gain of 14.7 p.c. followed by non-metallic mineral products with an increase of 8.4 p.c., non-ferrous metal products 6.3 p.c., electrical apparatus and supplies 4.9 p.c. and wood products 3.5 p.c. The increased volume of the wood and non-metallic mineral products groups reflected an active construction industry. The primary iron and steel industry, which is an important component of the iron and steel group, registered a gain in volume of 37.7 p.c.

The drop in the transportation equipment group as a whole was only 0.8 p.c. and was the over-all result of mixed trends in the various industries composing the group. The motor vehicle parts industry increased 17.1 p.c. in volume, the motor vehicle industry 7.4 p.c., and the shipbuilding industry a fractional amount. On the other hand, the aircraft and railway rolling-stock industries declined 24.7 p.c. and 14.5 p.c., respectively, the former resulting partly from lower export shipments.

The improvement in manufacturing production in 1959 was not the same for all provinces. Perhaps the most outstanding feature was the continued expansion in manufacturing employment in Saskatchewan, which increased 2.1 p.c. in 1959 after an increase of 2.3 p.c. in 1958 when all other provinces reported declines. The three Prairie Provinces as a unit achieved the greatest expansion in employment with an increase of 2.9 p.c. Ontario came second with an increase of 1.5 p.c., followed by British Columbia with 0.9 p.c. and Quebec with 0.4 p.c. The Atlantic Provinces reported a drop of 0.8 p.c. in employment, mainly because of the failure of Nova Scotia to share in the expansion common to the remainder of Canada in varying degrees. Despite the great industrial progress made by other provinces, Ontario continued to maintain its predominance and in 1959 accounted for 50.0 p.c. of the total value of factory shipments in Canada, compared with 49.0 p.c. in 1958. Quebec was second with 29.7 p.c. of the total compared with 30.5 p.c. in 1958, and British Columbia third with 8.0 p.c. compared with 8.1 p.c. in 1958.

PART II.—STATISTICS OF MANUFACTURING

Section 1.—Growth of Manufacturing

It is impossible to give absolutely comparable statistics of manufacturing over a long period of years. From 1870 to 1915 statistics were collected only in connection with decennial or quinquennial censuses and there was inevitably some variation in the information collected. The annual Census of Manufactures was instituted in 1917 and, though numerous changes have since been made in the information collected and in the treatment of the data, an effort has been made to carry all major revisions back to 1917, so that the figures for the period since then are on a reasonably comparable basis.

The Bureau of Statistics in 1952 changed its policy with regard to the collection of statistics on the production of manufactured goods. Firms in several industries where year-end inventory changes were known to be insignificant were requested to report value of shipments f.o.b. plant instead of gross value of products. Under the "value of products" concept, establishments were asked to report the factory selling value of the products made whether sold or not, the unsold portion being assigned the average selling value of similar articles sold during the year. Under the "selling value of shipments" concept, establishments are required to report their sales during the year regardless of when the products were made, an item usually readily available from the firms' records. The changeover was made in order to ease the burden of reporting for the majority of manufacturing establishments. The value of shipments concept for small and medium sized establishments is more realistic and more readily obtainable from their accounting records, whereas the value of products made, for firms not recording such information, must be derived from special calculations.

1.—Summary Statistics of Manufactures, 1917-59

NOTE.—Statistics of manufacturing from 1870 have been published but between that year and 1917 figures are not on a comparable basis to the series given below. Statistics for significant years appear in the 1943-44 Year Book, p. 363. Figures of the non-ferrous metal smelting industries were first included with manufactures in 1925.

Year	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture[1]	Gross Value of Products[2]
	No.	No.	$	$	$	$
1917	21,845	606,523	497,801,844	1,539,678,811	1,281,131,980	2,820,810,791
1918	21,777	602,179	567,991,171	1,827,631,548	1,399,794,849	3,227,426,397
1919	22,083	594,066	601,715,668	1,779,056,765	1,442,400,638	3,221,457,403
1920	22,532	598,893	717,493,876	2,085,271,649	1,621,273,348	3,706,544,997
1921	20,848	438,555	497,399,761	1,365,292,885	1,123,694,263	2,488,987,148
1922	21,016	456,256	489,397,230	1,272,651,585	1,103,266,106	2,375,917,691
1923	21,080	506,203	549,529,631	1,456,595,367	1,206,332,107	2,662,927,474
1924	20,709	487,610	534,467,675	1,422,573,946	1,075,458,459	2,570,561,931
1925[3]	20,981	522,924	569,944,442	1,571,788,252	1,167,936,726	2,816,864,958
1926[3]	21,301	559,161	625,682,242	1,712,519,991	1,305,168,549	3,100,604,637
1927[3]	21,501	595,052	662,705,332	1,741,128,711	1,427,649,292	3,257,214,876
1928[3]	21,973	631,429	721,471,634	1,894,027,188	1,597,887,676	3,582,345,302
1929[3]	22,216	666,531	777,291,217	2,029,670,813	1,755,386,937	3,883,446,116
1930[3]	22,618	614,696	697,555,378	1,664,787,763	1,522,737,125	3,280,236,603
1931	23,083	528,640	587,566,990	1,221,911,982	1,252,017,248	2,555,126,448
1932	23,102	468,833	473,601,716	954,381,097	955,960,724	1,980,417,543
1933	23,780	468,658	436,247,824	967,788,928	919,671,181	1,954,075,785
1934	24,209	519,812	503,851,055	1,229,513,621	1,087,301,742	2,393,692,729
1935	24,034	556,664	559,467,777	1,419,146,217	1,153,485,104	2,653,911,209
1936	24,202	594,359	612,071,434	1,624,213,996	1,289,592,672	3,002,403,814
1937	24,834	660,451	721,727,037	2,006,926,787	1,508,924,867	3,625,459,500
1938	25,200	642,016	705,668,589	1,807,478,028	1,428,286,778	3,337,681,366
1939	24,805	658,114	737,811,153	1,836,159,375	1,531,051,901	3,474,783,528
1940	25,513	762,244	920,872,865	2,449,721,903	1,942,471,238	4,529,173,316
1941	26,293	961,178	1,264,862,643	3,296,547,019	2,605,119,788	6,076,308,124
1942	27,862	1,152,091	1,682,804,842	4,037,102,725	3,309,973,758	7,553,794,972
1943	27,652	1,241,068	1,987,292,384	4,690,493,083	3,816,413,541	8,732,860,999
1944	28,483	1,222,882	2,029,621,370	4,832,333,356	4,015,776,010	9,073,692,519
1945	29,050	1,119,372	1,845,773,449	4,473,668,847	3,564,315,899	8,250,368,866
1946	31,249	1,058,156	1,740,687,254	4,358,234,766	3,467,004,980	8,035,692,471
1947	32,734	1,131,750	2,085,925,966	5,534,280,019	4,292,055,802	10,081,026,580
1948	33,420	1,155,721	2,409,368,190	6,632,881,628	4,938,786,981	11,875,169,685
1949[4]	35,792	1,171,207	2,591,890,657	6,843,231,064	5,330,566,434	12,479,593,300
1950[4]	35,942	1,183,297	2,771,267,435	7,538,534,532	5,942,058,229	13,817,526,381
1951	37,021	1,258,375	3,276,280,917	9,074,526,353	6,940,946,783	16,392,187,132
1952	37,929	1,288,382	3,637,620,160	9,146,172,494	7,443,533,199	16,982,687,035
1953	38,107	1,327,451	3,957,018,348	9,380,558,682	7,993,069,351	17,785,416,854
1954	38,028	1,267,966	3,896,687,691	9,241,857,554	7,902,124,137	17,554,527,504
1955	38,182	1,298,461	4,142,409,534	10,338,202,165	8,753,450,496	19,513,933,811
1956	37,428	1,353,020	4,570,692,190	11,721,536,889	9,605,424,579	21,636,748,986
1957	37,875	1,359,061	4,819,627,999	11,900,751,703	9,822,084,726	22,183,594,311
1958	36,741[r]	1,289,602	4,802,496,260	11,821,567,471[r]	9,792,505,931	22,163,186,308
1959	36,193	1,303,956	5,073,073,706	12,552,200,543	10,320,962,881	23,311,601,481

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[1] For 1924-51, inclusive, the value added by manufacture is computed by subtracting cost of fuel, electricity and materials from gross value of products; for 1952 and 1953 the deduction is made from value of factory shipments and for 1954 and subsequent years from the calculated value of production. Figures prior to 1924 are not comparable because statistics for cost of electricity are not available.

[2] In 1952 gross value of products was replaced by selling value of factory shipments; see text immediately preceding this table.

[3] A change in the method of computing the number of employees in the years 1925 to 1930, inclusive, increased the number somewhat over that which the method otherwise used would have given. In 1931, however, the method in force prior to 1925 was re-adopted.

[4] Newfoundland is included from 1949 but figures for the fish processing industry for 1949 and 1950 are not available for that province and are not included.

Provincial distribution of manufactures for certain years from 1917-59 is given in Table 2.

2.—Summary Statistics of Manufactures, by Province, Certain Years 1917-59

Province and Year	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture[1]	Gross Value of Products[2]
	No.	No.	$	$	$	$
Newfoundland—						
1949[3]	793	6,934	15,486,336	31,228,173	32,918,776	67,264,282
1953	939	10,575	26,604,908	44,972,021	57,784,697	106,524,603
1955	785	10,361	28,604,468	49,914,856	60,586,922	115,579,036
1957	916	10,473	32,783,715	53,995,122	56,543,792	117,713,795
1958	768	9,604	29,233,569	52,156,291	58,044,514	116,979,200
1959	797	9,620	30,481,291	54,001,782	57,754,510	119,007,053
Prince Edward Island—						
1917	411	1,556	663,251	3,087,621	1,750,135	4,837,756
1920	370	1,287	855,210	4,164,223	2,135,857	6,300,080
1929[4]	263	2,074	727,286	2,862,725	1,466,446	4,408,608
1933	249	991	529,684	1,590,834	1,126,826	2,775,787
1939	222	1,088	617,945	2,239,117	1,243,979	3,543,681
1946	246	1,755	1,651,469	7,582,046	3,469,435	11,200,310
1949	251	1,747	2,133,555	13,537,144	4,338,320	18,123,200
1953	216	1,809	3,095,845	16,963,798	5,878,761	23,198,970
1955	204	1,769	3,074,085	16,803,035	6,431,660	23,628,831
1957	193	1,663	3,278,822	18,315,249	6,579,507	24,952,853
1958	179	1,632	3,389,985	19,203,457	7,266,497	26,887,728
1959	178	1,769	3,856,186	19,947,082	7,391,294	27,670,896
Nova Scotia—						
1917	1,337	25,252	18,838,051	102,415,215	57,565,703	159,980,918
1920	1,345	23,425	25,625,089	85,724,785	61,371,243	147,096,028
1929[4]	1,094	19,986	16,905,885	50,725,562	35,676,421	89,787,548
1933	1,277	12,211	9,604,680	25,354,319	19,988,257	47,912,432
1939	1,083	17,627	16,651,685	43,332,195	35,885,563	83,139,572
1946	1,397	29,724	43,060,259	100,354,480	71,738,873	178,793,420
1949	1,480	29,311	54,686,577	135,841,899	102,294,298	247,592,389
1953	1,591	32,040	76,390,755	180,543,535	127,917,165	320,012,264
1955	1,524	30,218	76,555,923	175,194,419	139,646,423	331,129,690
1957	1,356	31,530	90,634,615	238,286,745	175,682,924	427,299,045
1958	1,297	29,010	86,005,553	217,263,603	176,997,949	411,929,247
1959	1,314	28,168	87,694,029	223,016,082	161,451,957	398,663,678
New Brunswick—						
1917	943	19,710	12,893,014	32,380,621	27,027,725	59,408,346
1920	901	19,007	19,266,821	60,812,641	45,803,164	106,615,805
1929[4]	803	17,952	15,127,716	39,800,366	26,640,786	68,145,012
1933	747	11,336	9,308,100	20,442,421	18,166,713	41,345,622
1939	803	14,501	13,659,162	35,617,614	27,041,195	66,058,151
1946	993	22,732	33,151,919	96,389,299	67,783,377	170,753,741
1949	1,060	23,446	44,219,819	131,804,253	91,187,375	231,506,191
1953	1,094	24,471	59,753,045	163,797,711	120,617,345	295,750,419
1955	1,052	22,434	56,683,345	160,905,219	120,808,214	294,829,050
1957	981	20,985	60,485,307	174,741,863	123,547,460	311,795,501
1958	939	20,744	61,077,171	170,560,975	130,668,021	312,021,817
1959	915	20,927	63,872,872	178,064,623	133,935,278	325,478,717
Quebec—						
1917	7,032	188,043	141,008,616	385,212,984	380,882,409	766,095,393
1920	7,530	183,748	202,516,550	553,558,520	499,643,217	1,053,201,737
1929[4]	6,948	206,580	225,226,808	537,270,055	537,796,395	1,108,592,775
1933	7,856	157,481	134,696,386	292,560,568	288,504,782	604,496,078
1939	8,373	220,321	223,757,767	536,828,039	470,385,279	1,045,757,585
1946	10,818	357,276	565,986,105	1,297,009,099	1,125,991,848	2,497,971,521
1949	11,579	390,275	809,579,270	2,027,793,643	1,651,629,668	3,788,497,123
1953	12,132	441,555	1,225,573,314	2,816,373,112	2,424,647,499	5,386,784,863
1955	12,194	429,575	1,271,077,953	3,152,541,331	2,622,333,056	5,922,367,074
1957	12,250	449,383	1,477,828,336	3,570,908,799	2,947,897,608	6,679,595,056
1958	11,828	429,358	1,476,605,908	3,597,784,845	2,970,774,755	6,754,798,278
1959	11,584	431,237	1,546,932,670	3,749,731,529	2,998,776,012	6,916,199,594
Ontario—						
1917	9,061	299,389	258,393,065	794,556,502	662,174,261	1,456,730,763
1920	9,113	295,674	362,941,317	1,071,843,374	792,267,562	1,864,110,936
1929[4]	9,348	328,533	406,622,627	1,056,530,202	916,971,816	2,020,492,433
1933	9,542	224,816	220,530,088	464,544,563	465,103,842	958,776,858
1939	9,824	318,871	378,376,209	907,011,461	791,428,569	1,745,674,707

For footnotes, see end of table, p. 634.

2.—Summary Statistics of Manufactures, by Province, Certain Years 1917-59—concluded

Province or Territory and Year	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture[1]	Gross Value of Products[2]
	No.	No.	$	$	$	$
Ontario—concluded						
1946	11,424	498,120	845,216,547	2,001,900,592	1,659,284,622	3,754,523,701
1949	12,951	557,190	1,305,544,434	3,256,454,918	2,708,554,013	6,103,804,834
1953	13,114	634,554	2,017,982,218	4,560,134,562	4,130,126,462	8,876,504,990
1955	13,276	613,872	2,088,905,627	5,014,225,423	4,426,654,771	9,617,642,961
1957	13,580	644,245	2,430,676,464	5,827,317,500	5,047,710,789	11,078,592,683
1958	13,276	606,362	2,412,654,652	5,704,319,497	4,914,073,665	10,864,028,332
1959	13,081	615,746	2,564,684,234	6,190,618,182	5,332,081,500	11,668,460,562
Manitoba—						
1917	732	18,939	16,513,423	69,715,149	42,280,801	111,995,950
1920	747	23,728	32,372,081	92,729,271	62,776,912	155,506,183
1929[4]	861	24,012	31,224,596	87,832,324	63,925,015	155,266,294
1933	1,010	18,871	18,687,430	44,579,998	37,390,275	83,934,777
1939	1,087	23,910	28,444,798	82,408,293	48,810,544	134,293,595
1946	1,357	38,367	61,018,345	223,096,935	122,780,805	351,887,099
1949	1,520	41,956	86,088,380	299,101,498	167,335,495	474,681,912
1953	1,540	43,740	121,126,279	345,403,115	229,797,439	584,872,459
1955	1,549	41,318	121,718,573	329,698,765	247,472,108	588,351,081
1957	1,590	43,884	140,200,256	379,799,214	273,162,757	664,529,736
1958	1,634	42,382	142,859,485	397,453,172	284,367,542	694,051,323
1959	1,607	43,145	153,998,025	422,094,615	308,341,217	743,509,352
Saskatchewan—						
1917	560	6,230	5,403,332	22,040,674	13,894,179	35,934,853
1920	554	6,709	9,571,175	34,894,105	22,610,861	57,504,966
1929[4]	594	7,025	9,105,597	51,003,566	23,002,952	75,368,605
1933	673	4,782	4,848,763	19,124,030	11,478,634	31,559,387
1939	737	6,475	7,346,127	38,782,135	20,283,273	60,650,589
1946	955	11,957	17,956,317	126,595,761	38,459,630	168,356,619
1949	962	10,841	22,273,942	164,349,341	47,356,949	215,742,708
1953	1,062	11,604	32,395,518	180,303,942	79,941,332	266,613,086
1955	960	11,490	34,825,511	174,078,701	113,598,622	295,162,037
1957	844	12,012	40,875,349	189,106,737	109,598,807	306,115,112
1958	970	12,283	43,228,392	198,833,974	123,394,168	331,298,441
1959	883	12,539	47,033,816	213,376,697	125,877,439	347,320,321
Alberta—						
1917	636	9,461	8,662,417	42,632,212	23,883,673	66,515,885
1920	666	10,955	15,210,628	56,139,646	29,812,891	85,952,537
1929[4]	736	12,216	14,585,734	62,500,175	36,824,969	100,966,196
1933	874	9,753	9,573,468	29,425,975	18,876,929	49,395,514
1939	961	12,712	14,977,700	53,151,149	32,618,153	87,474,080
1946	1,315	22,649	34,939,088	169,425,176	83,735,011	257,031,867
1949	1,685	26,425	55,115,554	251,364,059	114,681,296	371,995,120
1953	2,072	33,082	92,605,153	346,221,162	199,660,428	555,814,827
1955	2,126	34,846	106,548,815	366,022,853	263,308,701	641,148,235
1957	1,893	39,089	137,077,438	461,134,040	312,037,090	784,480,512
1958	1,762	37,860	140,135,179	495,311,847	339,439,455	848,251,994
1959	1,830	39,522	152,505,413	524,268,966	346,299,750	887,316,797
British Columbia—						
1917[5]	1,133	37,943	35,426,675	87,637,833	71,673,094	159,310,927
1920[5]	1,306	34,360	49,135,005	125,405,084	104,851,641	230,256,725
1929[4,5]	1,569	48,153	57,764,968	141,145,838	113,082,137	260,418,645
1933[5]	1,552	28,417	28,469,225	70,166,220	59,034,923	133,879,330
1939	1,710	42,554	53,881,994	136,655,872	103,263,292	247,948,600
1946	2,731	75,484	137,506,645	335,708,533	293,352,652	644,527,898
1949	3,493	82,934	196,403,722	531,112,329	409,665,348	959,008,088
1953	4,317	93,844	300,921,318	724,495,754	615,686,215	1,366,823,690
1955	4,486	102,408	353,810,727	895,973,668	750,877,508	1,679,344,816
1957	4,250	105,631	405,129,932	985,519,123	767,914,301	1,785,298,750
1958	4,072	100,222	406,628,209	965,939,626	786,620,211	1,798,960,459
1959	3,992	101,168	421,405,086	974,924,176	848,404,204	1,875,142,125
Yukon and N.W.T.—						
1939	5	55	97,766	138,500	92,054	242,968
1946	13	92	200,560	172,845	408,727	646,295
1949	18	148	359,068	643,807	604,896	1,377,453
1953	30	177	569,995	1,349,970	1,012,008	2,516,683
1955	26	170	604,507	2,843,895	1,732,511	4,751,000
1957	22	166	657,765	1,627,311	1,409,691	3,221,268
1958	16	145	678,157	2,740,184	859,154	3,979,489
1959	12	115	610,084	2,156,809	649,720	2,832,386

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[1] See footnote 1, Table 1, p. 632. [2] In 1952 gross value of products was replaced by selling value of factory shipments; see text on p. 631. [3] Excludes figures for the fish processing industry which are not available for 1949. [4] See footnote 3, Table 1, p. 632. [5] Includes Yukon Territory.

The figures in Table **3** trace the tendencies in manufacturing industries as clearly as possible from 1917 to 1959. In analysing statistics of production and materials used, price changes should be borne in mind, particularly the inflation of values in the years immediately following World War I, the drop in prices of commodities during the depressions following 1921 and 1930, and the increases again in World War II and the postwar period.

3.—Significant Statistics of Manufactures for Certain Years 1917-59

Item	1917	1920	1929[1]	1933	1939
Establishments........ No.	21,845	22,532	22,216	23,780	24,805
Total employees........ “	606,523	598,893	666,531	468,658	658,114
Av. per establishment “	27.8	26.6	30.0	19.7	26.5
Total earnings .... $	497,801,844	717,493,876	777,291,217	436,247,824	737,811,153
Av. per establishment $	22,788	31,843	34,988	18,345	29,744
Av. per employee..... $	821	1,198	1,166	931	1,121
Supervisory and office employees.......... No.	64,918	78,334	88,841	86,636	124,772
Av. per establishment “	3.0	3.5	4.0	3.6	5.0
Total earnings.......... $	85,353,667	141,837,361	175,553,710	139,317,946	217,839,334
Av. per employee.... $	1,315	1,811	1,976	1,608	1,746
Production workers.... No.	541,605	520,559	577,690	382,022	533,342
Av. per establishment “	24.8	23.1	26.0	16.1	21.5
Total earnings.......... $	412,448,177	575,656,515	601,737,507	296,929,878	519,971,819
Av. per employee.... $	762	1,106	1,042	777	975
Cost of materials ...... $	1,539,678,811	2,085,271,649	2,029,670,813	967,788,928	1,836,159,375
Av. per establishment $	70,482	92,547	91,361	40,698	74,024
Av. per employee.... $	2,539	3,482	3,045	2,065	2,790
Value added by manufacture[2]............ $	1,281,131,980	1,621,273,348	1,755,386,937	919,671,181	1,531,051,901
Av. per establishment[2] $	58,646	71,954	79,015	38,674	61,724
Av. per employee[2].... $	2,112	2,707	2,634	1,962	2,326
Gross value of products. $	2,820,810,791	3,706,544,997	3,883,446,116	1,954,075,785	3,474,783,528
Av. per establishment $	129,128	164,501	174,804	82,173	140,084
Av. per employee.... $	4,651	6,189	5,286	4,170	5,280
	1944	1953	1957	1958	1959
Establishments........ No.	28,483	38,107	37,875	36,741	36,193
Total employees........ “	1,222,882	1,327,451	1,359,061	1,289,602	1,303,956
Av. per establishment “	42.9	34.8	35.9	35.1	36.0
Total earnings.......... $	2,029,621,370	3,957,018,348	4,819,627,999	4,802,496,260	5,073,073,706
Av. per establishment $	71,257	103,840	127,251	130,712	140,167
Av. per employee.... $	1,660	2,981	3,546	3,724	3,891
Supervisory and office employees.......... No.	192,558	274,225	313,884	307,867	306,049
Av. per establishment “	6.8	7.2	8.3	8.4	8.5
Total earnings.......... $	418,065,594	1,016,679,409	1,403,401,749	1,469,324,281	1,529,617,999
Av. per employee.... $	2,171	3,707	4,471	4,773	4,997
Production workers.... No.	1,030,324	1,053,226	1,045,177	981,735	997,907
Av. per establishment “	36.2	27.6	27.6	26.7	27.6
Total earnings.......... $	1,611,555,776	2,940,338,939	3,416,226,250	3,333,171,979	3,543,455.707
Av. per employee.... $	1,564	2,792	3,269	3,395	3,551
Cost of materials....... $	4,832,333,356	9,380,558,682	1,900,751,703	11,821,567,471	12,552,200,543
Av. per establishment $	169,657	246,163	314,211	321,754	346,813
Av. per employee.... $	3,952	7,067	8,757	9,167	9,626
Value added by manufacture[2]............ $	4,015,776,010	7,993,069,351	9,822,084,726	9,792,505,931	10,320,962,881
Av. per establishment[2] $	140,989	209,753	259,329	266,528	285,165
Av. per employee[2].... $	3,284	6,021	7,227	7,593	7,915
Gross value of products. $	9,073,692,519	17,785,416,854[3]	2,183,594,311[3]	22,163,186,308[3]	23,311,601,481[3]
Av. per establishment $	318,565	466,723	585,705	603,228	644,091
Av. per employee.... $	7,420	13,398	16,323	17,186	17,878

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[1] A change in the method of computing the number of production workers in the years 1925 to 1930 inclusive increased the number somewhat over that which the method otherwise used would have given. There was therefore a proportionate reduction in the averages for 1925-30 per employee as compared with what these averages would have been under the other method. In 1931, however, the method in force prior to 1925 was re-adopted. The figures for 1931 and later years are therefore comparable with those for 1924 and earlier years.

[2] Net value of products; see footnote 1, Table 1, p. 632.

[3] In 1952 gross value of products was replaced by value of factory shipments; see text on p. 631.

Subsection 1.—Consumption of Manufactured Products*

The value of all manufactured commodities made available for consumption in 1958 was $23,130,592,757, a figure obtained by adding to the value of manufactured products the value of the imports of manufactured goods and deducting the value of the exports. More accurate statistics could be presented were it possible to exclude from the value of factory shipments the duplications involved when the products of one manufacturing establishment become the material worked upon in another. Iron, vegetable, wood and paper, animal, non-ferrous metals and non-metallic minerals were, in that order, the leading groups in the value of finished products made available for consumption in 1958. The decrease of 1.4 p.c. in the total value of manufactured products available for consumption in 1958 from the 1957 total was attributable mainly to lower production and lower imports of iron and its products and of non-ferrous metal products.

Wood and paper, animal, and non-ferrous metal products are manufactured in Canada in greater quantities than required for home consumption, providing export balances in these groups. Canada in the past imported large quantities of iron and steel, textiles, chemicals and non-metallic mineral products despite large home production. However, the recent expansion of the iron and steel, chemical and non-metallic mineral products industries is enabling Canada to meet a greater proportion of the domestic requirements.

In Table 4, showing consumption of manufactured products, the component material classification is still used to agree with the classification used for imports and exports. The standard industrial classification grouping used elsewhere throughout this Chapter will be adopted for trade statistics beginning with 1961.

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* 1959 figures not available at time of going to press.

4.—Consumption of Manufactured Products, Certain Years 1929-58, and by Industrial Group 1958

Year and Industrial Group	Value of Products Manufactured[1]	Manufactured and Partly Manufactured Goods[2]		Value of Manufactured Products Available for Consumption
		Value of Net Imports	Value of Domestic Exports	
	$	$	$	$
1929	3,883,446,116	939,130,201	686,876,071	4,135,700,246
1933	1,954,075,785	298,068,344	365,232,113	1,886,912,016
1939	3,474,783,528	542,364,930	646,853,938	3,370,294,520
1944	9,073,692,519	1,302,413,996	2,668,575,781	7,707,530,734
1946	8,035,692,471	1,390,123,100	1,701,677,026	7,724,138,545
1949	12,479,593,300	2,043,583,929	2,017,055,615	12,506,121,614
1953	17,785,416,854	3,519,418,503	2,781,269,785	18,523,565,572
1955	19,513,933,811	3,781,212,944	3,143,126,437	20,152,020,318
1956	21,636,748,986	4,639,037,713	3,261,774,777	23,014,011,922
1957	22,183,594,311	4,525,870,602	3,251,376,449	23,458,088,464
1958				
Vegetable products	3,103,762,931	347,828,658	194,827,620	3,256,763,969
Animal products	2,407,196,473	69,577,063	115,142,268	2,361,631,268
Textiles and textile products	1,593,944,149	320,640,859	19,054,430	1,895,530,578
Wood and paper products	4,007,449,302	223,456,856	1,365,356,430	2,865,549,728
Iron and its products	4,769,298,622	1,776,296,633	324,758,559	6,220,836,696
Non-ferrous metal products	2,546,613,777	377,980,374	598,195,260	2,326,398,891
Non-metallic mineral products	2,103,105,691	275,711,119	107,293,909	2,271,522,901
Chemicals and allied products	1,239,536,483	285,397,742	197,051,344	1,327,882,881
Miscellaneous industries[3]	392,278,880	369,927,362	157,730,397	604,475,845
Totals, 1958	**22,163,186,308**	**4,046,816,666**	**3,079,410,217**	**23,130,592,757**

[1] In 1952 gross value of products was replaced by selling value of factory shipments; see text on p. 631.
[2] Figures for the years 1929 and 1933 are for the fiscal years ended Mar. 31 of the following years; 1939-58 figures are for the calendar year. Net imports are total imports less foreign products re-exported.
[3] Not comparable with previous years since certain items formerly included are no longer considered as merchandise trade; these exclusions dropped about $30,000,000 from the production value, $150,000,000 from the value of imports, and thus $120,000,000 from the available-for-consumption value.

Subsection 2.—Value and Volume of Manufactured Production

Value of Manufactured Production.—In the interpretation of manufacturing values over a number of years, variations in the level of prices must be borne in mind. In recent years, owing to great changes in prices, unadjusted value series used in isolation have become increasingly inadequate as indicators of economic trends. Consequently, interest has shifted to measures of volume. The range of prices since 1929, on the base period 1935-39 = 100, is as follows:—

Year	*General Wholesale Price Index*	*Price Index of Fully or Chiefly Manufactured Products*
1929	124.6	123.7
1933	87.4	93.3
1939	99.2	101.9
1944	130.6	129.1
1946	138.9	138.0
1949	198.3	199.2
1953	220.7	228.8
1955	218.9	224.5
1956	225.6	231.5
1957	227.4	237.9
1958	227.8	238.3
1959	230.6	241.6

Volume of Manufactured Production.—Real income is ultimately measured in goods and services so that the growth of the volume of manufacturing production, as distinguished from its value, becomes a matter of great significance. The important thing to know is whether consumers are getting more goods and services and not whether they are expending more dollars and cents.

During the past few years the Dominion Bureau of Statistics has been engaged in the reconstruction of the index of industrial production* which was first published in 1926 and later subjected to several major revisions. The latest reconstruction was made possible by the availability of a great deal of basic data. Annual statistics valuable for this project have been collected by the Bureau from the end of World War I to the present and the scope of the monthly information has been greatly expanded. Applying methods developed through the experience of the past quarter-century, it has been possible to compute an index with a fair measure of accuracy from 1935 to the present.

The manufacturing sector is divided at the major group level into durable manufactures and non-durable manufactures. The movement of durable goods normally varies from that of non-durables; there tends to be greater fluctuation in durables from prosperity to depression and the demand for non-durables is more constant.

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* For a description of the methods used in constructing the index and a description of its scope, see DBS publication *Revised Index of Industrial Production, 1935-1957* (Catalogue No. 61-502).

5.—Index of the Total Volume of Manufactured Production classified on the Basis of Durable and Non-durable Goods, 1935-59

(1949=100)

Year	Durable Manufactures	Non-durable Manufactures	All Manufactures
1935	32.7	44.1	39.0
1936	36.9	48.1	43.0
1937	44.9	52.8	49.2
1938	40.9	49.0	45.3
1939	42.7	53.7	48.7
1940	59.3	61.6	60.4
1941	85.8	73.7	78.7
1942	112.1	84.3	96.1
1943	128.2	85.9	104.0
1944	128.3	89.5	106.1
1945	99.8	88.2	92.9
1946	79.9	89.8	85.2
1947	93.3	93.2	93.2
1948	98.4	96.3	97.3
1949	100.0	100.0	100.0
1950	106.5	106.0	106.2
1951	119.9	110.8	115.0
1952	124.8	113.2	118.5
1953	133.6	120.2	126.4
1954	124.8	121.2	122.9
1955	139.7	130.4	134.7
1956	153.3	138.1	145.1
1957	146.7	139.7	142.9
1958	139.9	141.3	140.7
1959	149.5	150.4	150.0

The period 1947-56 was characterized by unprecedented industrial expansion. The end of hostilities in 1945 and the subsequent reconversion to peacetime production were attended by declines in output but the upward trend was resumed in 1947. The rate of advance slackened moderately in 1948 and 1949 but regained most of its 1947 impetus in 1950 when the outbreak of hostilities in Korea resulted in heavy anticipatory buying on the part of consumers and in growing expenditures for national defence. By 1952 the index of the volume of manufacturing production at 118.5 had surpassed the record wartime level of 106.1 established in 1944. The index continued to advance in 1953, dropped somewhat in 1954 but moved upward again to a new high of 145.1 in 1956. Then, as a result of the minor recession which began in the autumn of 1957, the index for that year slipped to 142.9 and for 1958 to 140.7. The 1959 index stood at 150.0, the highest point on record.

Durable Manufactures.—Over the decade ended in 1959, the volume index of durable manufacturing output increased to a level of 149.5. With the exception of production cutbacks in 1954 and 1957-58, the advance was steady. In 1959, total durable manufacturing output increased by 7 p.c. over 1958, all major groups recording substantial increases during the year with the exception of transportation equipment, which was off marginally.

Of the six major durable groups, the only one to register an uninterrupted, almost spectacular advance was non-metallic mineral products. By 1959, this group had attained a level of 223.2. The steady increase over the years was associated with the growth in construction activity, this group producing mainly building materials such as concrete and concrete products, glass products, etc. The electrical apparatus and supplies group reached an index level of 184.8 in 1959, largely the result of sizable production advances in telecommunication equipment and refrigerators and appliances. Each of the other durable groups increased substantially during the decade.

6.—Indexes of the Volume of Manufactured Production of the Groups Comprised within the Durable Manufactures Classification, 1935-59

(1949=100)

Year	Wood Products	Iron and Steel Products	Transportation Equipment	Non-ferrous Metal Products	Electrical Apparatus and Supplies	Non-metallic Mineral Products
1935	42.3	29.2	34.2	40.1	22.9	24.6
1936	47.5	33.8	35.5	46.7	25.0	29.8
1937	53.6	42.9	43.4	54.4	32.5	38.2
1938	50.7	36.6	38.1	55.8	28.0	34.3
1939	54.0	39.1	37.7	58.4	28.4	35.7
1940	65.5	58.9	61.1	70.5	41.9	45.0
1941	74.5	86.4	106.1	98.9	61.8	60.1
1942	77.4	114.7	157.1	130.4	74.9	68.2
1943	73.6	131.6	198.4	145.6	85.0	68.8
1944	76.1	118.4	235.7	130.9	85.5	66.8
1945	77.2	96.3	157.0	98.8	70.7	63.7
1946	86.8	80.8	80.6	81.8	67.7	72.0
1947	98.2	93.6	95.3	89.6	89.6	86.3
1948	100.6	101.5	97.2	99.2	91.5	92.2
1949	100.0	100.0	100.0	100.0	100.0	100.0
1950	108.2	102.5	108.3	104.0	112.5	111.0
1951	114.8	117.0	131.3	114.1	120.7	119.8
1952	115.8	118.9	149.1	112.2	124.5	122.8
1953	125.4	115.3	165.2	120.1	150.9	139.2
1954	124.2	106.2	137.3	117.0	151.7	146.1
1955	136.4	123.8	145.1	127.5	176.2	171.1
1956	138.3	145.3	157.9	133.0	191.3	191.5
1957	127.3	139.6	151.2	127.6	183.6	191.3
1958	132.0	128.3	132.5	126.7	176.2	205.9
1959	136.6	147.2	131.5	134.7	184.8	223.2

Non-durable Manufactures.—The non-durable manufacturing group as a whole increased steadily during the postwar period, although the advances were of a relatively minor nature during both the 1954 and 1957-58 recessions. By 1959, the total non-durable index reached a high point of 150.4, increasing about 6 p.c. over 1958. During the year, 11 of the 12 main non-durable components advanced, the only exception being clothing products which was down by about 1 p.c. Increases ranged from about 4 p.c. in both foods and tobacco products to 17 p.c. in rubber products. Leather products and chemicals were up 5 p.c., beverages and printing and publishing 7 p.c., paper products 8 p.c., products of petroleum and coal 11 p.c., and textiles 13 p.c.

7.—Indexes of the Volume of Manufactured Production of the Groups Comprised within the Non-durable Manufactures Classification, 1935-59

(1949=100)

Year	Foods	Beverages	Tobacco and Tobacco Products	Rubber and Rubber Products	Leather Products	Textiles
1935	51.2	27.1	31.1	49.8	70.8	49.7
1936	56.6	32.1	35.7	54.5	71.1	55.5
1937	58.7	37.8	41.4	63.6	78.1	59.8
1938	59.0	37.1	45.9	55.0	68.9	48.1
1939	63.0	38.7	49.2	60.4	80.3	59.5
1940	68.5	45.5	53.1	66.0	85.7	81.1
1941	79.5	52.9	61.3	87.5	104.2	91.7
1942	83.4	60.8	76.0	85.3	110.8	102.0
1943	89.9	56.6	82.3	83.3	111.6	93.8
1944	97.7	66.7	89.6	84.4	110.5	87.9
1945	98.7	71.8	103.2	102.1	114.5	87.5
1946	103.0	82.2	90.6	89.5	124.0	88.7
1947	100.4	87.3	93.4	127.4	109.1	94.0
1948	99.5	95.3	93.4	116.4	95.5	97.3
1949	100.0	100.0	100.0	100.0	100.0	100.0
1950	104.4	102.1	103.4	116.8	95.6	112.5
1951	107.0	106.2	95.0	124.9	90.4	113.1
1952	112.8	115.5	108.0	118.9	101.0	102.9
1953	115.1	124.6	120.3	130.3	106.4	107.9
1954	120.2	121.7	124.7	119.2	100.2	94.3
1955	125.6	130.6	135.5	141.0	106.9	114.0
1956	131.4	138.4	145.9	154.0	115.6	117.3
1957	133.2	143.2	161.0	147.8	115.6	117.6
1958	140.1	147.7	173.2	137.2	114.4	109.9
1959	145.0	157.4	179.9	161.1	120.3	124.4

Year	Clothing[1]	Paper Products	Printing, Publishing and Allied Industries	Products of Petroleum and Coal	Chemicals and Allied Products	Miscel-laneous Industries
1935	57.2	38.6	50.2	37.8	31.4	31.4
1936	60.5	42.4	53.2	40.8	33.7	34.3
1937	65.3	48.9	56.5	44.9	39.3	37.1
1938	61.3	39.3	52.9	44.4	37.9	36.9
1939	67.3	45.2	54.7	48.1	40.7	38.6
1940	78.2	54.3	54.6	53.6	49.8	42.6
1941	88.4	61.6	60.6	61.1	77.2	60.8
1942	100.9	61.5	61.2	59.4	126.5	88.5
1943	97.7	60.0	59.7	65.1	135.1	112.1
1944	91.7	63.9	61.4	73.6	142.8	113.0
1945	91.4	69.1	67.3	71.9	107.1	98.3
1946	95.3	81.0	76.9	74.3	87.0	80.2
1947	92.2	89.1	83.6	79.8	90.8	84.1
1948	97.6	94.9	92.6	89.9	95.7	81.4
1949	100.0	100.0	100.0	100.0	100.0	100.0

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[1] Includes knitting mills.

7.—Indexes of the Volume of Manufactured Production of the Groups Comprised within the Non-durable Manufactures Classification, 1935-59—concluded

Year	Clothing[1]	Paper Products	Printing, Publishing and Allied Industries	Products of Petroleum and Coal	Chemicals and Allied Products	Miscellaneous Industries
1950	101.3	109.3	101.5	111.9	107.7	104.8
1951	101.2	117.5	105.1	128.5	120.0	119.0
1952	111.4	113.4	107.5	140.1	122.3	121.8
1953	115.0	118.1	114.7	153.5	139.9	141.1
1954	108.9	124.1	121.6	165.0	152.1	134.3
1955	112.8	131.0	127.1	188.3	165.5	136.4
1956	117.6	137.8	137.3	216.1	174.8	147.0
1957	116.8	135.5	138.2	223.5	183.4	153.3
1958	114.4	135.6	134.4	216.8	198.0	166.3
1959	113.1	145.9	143.2	241.5	208.4	183.2

[1] Includes knitting mills.

Section 2.—Manufactured Production Variously Classified

Subsection 1.—Manufactures classified by Industrial Groups and Individual Industries

The general review at pp. 629-631 outlines trends in manufacturing production during 1959. The tables of this Subsection give detailed statistics on which those trends are based. Table **8** shows the percentage variations between 1957 and 1958 and between 1958 and 1959 in number of employees, their salaries and wages and the value of goods produced in the main industrial groups; Table **9** gives comparative summary statistics for the period 1947-59; Table **10** contains the details of establishments, employment and output for the individual industries within the major groupings for the years 1958 and 1959; and Table **11** shows quantities and values of principal commodities produced in 1958—figures for 1959 were not available at time of going to press.

8.—Percentage Variations in Employment, Salaries and Wages and Selling Value of Factory Shipments in the Main Industrial Groups, 1958 Compared with 1957, and 1959 Compared with 1958.

Industrial Group	1958 Compared with 1957			1959 Compared with 1958		
	Number of Employees	Salaries and Wages	Selling Value of Factory Shipments	Number of Employees	Salaries and Wages	Selling Value of Factory Shipments
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Foods and beverages	− 0.9	+ 5.6	+ 8.6	+ 0.9	+ 6.3	+ 3.2
Tobacco and tobacco products	+ 4.2	+11.5	+22.2	− 0.3	+ 2.5	+ 6.4
Rubber products	−10.1	− 8.1	− 5.4	+ 5.8	+13.6	+12.7
Leather products	− 3.0	+ 1.2	+ 3.4	+ 2.9	+ 5.1	+ 9.9
Textiles	− 7.4	+ 4.1	− 1.2	+ 0.2	+ 5.0	+ 8.6
Knitting mills	− 3.3	− 0.8	+ 0.8	+ 0.3	+ 4.7	+ 9.0
Clothing	− 4.0	− 0.5	− 1.2	− 0.1	+ 4.4	+ 2.3
Wood products	− 4.7	+ 0.3	+ 0.6	+ 2.4	+ 4.9	+ 6.1
Paper products	− 1.4	+ 1.6	+ 1.3	+ 1.4	+ 5.1	+ 7.3
Printing, publishing and allied industries	− 3.1	+ 4.9	+ 4.2	+ 2.4	+ 7.0	+ 8.1
Iron and steel products	− 9.6	− 6.2	− 7.1	+ 7.5	+13.8	+13.7
Transportation equipment	−12.9	− 6.4	− 8.5	− 9.8	− 4.0	− 2.6
Non-ferrous metal products	− 6.0	− 0.7	− 9.0	+ 1.4	+ 4.5	+13.7
Electrical apparatus and supplies	− 7.9	− 1.3	− 5.8	− 1.4	+ 0.2	+ 3.2
Non-metallic mineral products	+ 1.8	+ 7.7	+ 5.7	+ 6.1	+10.4	+ 9.0
Products of petroleum and coal	− 1.9	+ 0.9	− 1.7	− 3.8	+ 4.9	+ 5.0[1]
Chemicals and allied products	− 0.3	+ 5.3	+ 7.5	+ 0.4	+ 4.0	+ 6.6
Miscellaneous industries	+ 3.0	+ 9.2	+10.9	+ 5.2	+ 9.5	+ 9.9
Averages, All Groups	**− 5.1**	**− 0.4**	**− 0.1**	**+ 1.1**	**+ 5.6**	**+ 5.2**

[1] Not comparable with published figures on shipments which show a drop of 13.5 p.c. A change in the method of valuing shipments in 1959 resulted in lower unit values being reported.

9.—Summary Statistics of Manufactures, by Industrial Group, 1947-59

NOTE.—Figures for 1946, 1948 and 1950 will be found in the 1952-53 Year Book, pp. 611-613; those for 1952 in the 1955 edition, pp. 645-647; for 1953 in the 1956 edition, pp. 636-638; for 1954 in the 1957-58 edition, pp. 644-645; and for 1956 in the 1960 edition, pp. 671-673.

Industrial Group and Year	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Gross Value of Products[1]
	No.	No.	$	$	$	$
Foods and Beverages—						
1947	8,869	167,865	276,245,015	1,656,529,086	695,092,932	2,383,975,675
1949	8,558	170,024	332,536,319	2,009,246,062	834,017,547	2,882,581,753
1951	8,388	172,493	392,859,435	2,419,206,798	985,240,884	3,450,030,515
1955	8,134	180,085	498,786,577	2,319,782,949	1,257,652,677	3,614,315,616
1957	8,536	192,177	590,025,115	2,704,377,446	1,437,422,949	4,171,971,292
1958	8,417	190,445	623,289,596	2,939,312,503	1,536,379,118	4,528,889,289
1959	8,165	192,092	662,539,156	2,967,680,288	1,613,441,033	4,673,889,281
Tobacco and Tobacco Products—						
1947	91	10,880	16,234,772	97,121,002	49,221,094	146,793,011
1949	72	10,686	21,896,378	113,357,196	58,529,226	172,420,213
1951	62	9,826	24,438,218	119,590,053	59,033,325	179,177,093
1955	56	9,529	29,446,891	163,027,885	88,652,932	250,933,785
1957	49	9,905	33,322,821	160,710,422	88,283,832	249,734,356
1958	40	10,319	37,143,602	206,043,534	98,917,748	305,138,636
1959	40	10,287	38,078,218	212,770,678	111,694,215	324,563,661
Rubber Products—						
1947	60	23,475	46,613,893	82,934,625	110,673,007	196,307,734
1949	62	20,729	48,172,207	73,895,718	101,705,513	178,503,559
1951	67	23,054	64,357,696	146,951,650	161,184,980	311,678,489
1955	82	21,913	73,774,964	137,074,770	187,029,017	322,412,379
1957	88	22,178	83,189,580	144,246,768	176,456,204	326,091,308
1958	89	19,943	76,445,003	128,572,616	174,828,149	308,383,196
1959	89	21,093	86,859,037	160,396,526	188,179,495	347,680,280
Leather Products—						
1947	792	35,724	52,628,612	123,894,474	86,646,061	212,430,165
1949	747	34,900	59,699,886	117,869,462	91,157,684	210,804,174
1951	711	31,578	59,668,764	135,114,110	84,885,048	221,882,794
1955	646	30,575	68,970,276	108,961,619	107,215,340	218,043,090
1957	624	31,099	77,768,483	122,529,541	116,139,080	238,789,101
1958	598	30,151	78,683,799	124,663,736	119,088,395	246,826,765
1959	586	31,012	82,735,223	143,765,770	129,812,337	271,175,005
Textiles—						
1947	747	73,979	116,228,736	289,986,732	215,170,493	514,844,838
1949	847	77,773	156,166,554	339,644,950	285,641,367	636,824,130
1951	892	81,710	185,030,489	495,304,102	337,936,447	846,477,303
1955	977	69,144	187,805,044	408,890,576	314,533,385	734,515,445
1957	929	68,512	201,578,812	412,433,901	330,984,539	747,666,541
1958	903	63,472	193,327,948	394,621,103	322,533,105	738,690,714
1959	879	63,579	202,903,500	429,640,871	363,536,279	802,517,086
Clothing—[2]						
1947	3,121	110,329	166,951,727	311,018,817	300,527,093	614,594,703
1949	3,058	117,752	206,512,782	371,128,833	352,741,236	727,498,836
1951	3,083	115,733	222,364,947	405,347,118	370,672,177	780,012,025
1955	2,944	111,344	243,644,687	435,588,452	401,110,652	839,548,665
1957	2,860	112,775	269,175,810	487,188,490	436,761,970	921,790,234
1958	2,781	108,676	267,802,054	477,854,084	439,032,452	921,886,034
1959	2,678	108,670	279,700,236	499,790,560	457,972,828	955,085,617
Wood Products—						
1947	9,744	120,434	186,467,946	398,854,196	365,050,223	771,403,332
1949	11,191	121,632	224,902,644	436,637,453	393,928,758	840,355,634
1951	11,975	131,278	283,062,074	610,807,577	529,300,377	1,153,376,772
1955	11,804	133,673	354,439,897	723,815,493	631,857,981	1,375,343,554
1957	10,796	126,839	368,660,168	730,076,145	585,783,470	1,335,170,860
1958	9,848	120,922	369,581,549	717,462,536	605,677,512	1,343,593,579
1959	9,808	123,791	387,861,727	761,353,905	644,855,992	1,425,135,795

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[1] In 1952 gross value of products was replaced by selling value of factory shipments; see text on p. 631.

[2] Includes knitting mills.

9.—Summary Statistics of Manufactures, by Industrial Group, 1947-59—continued

Industrial Group and Year	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Gross Value of Products[1]
	No.	No.	$	$	$	$
Paper Products—						
1947	502	73,445	168,632,394	410,456,570	443,374,435	911,238,813
1949	524	76,471	208,348,621	494,300,501	532,288,636	1,093,060,326
1951	547	82,889	276,521,006	683,488,653	827,924,962	1,589,842,162
1955	580	89,750	349,777,049	793,008,069	867,261,587	1,754,098,505
1957	582	94,283	403,286,291	883,394,993	877,985,557	1,865,719,185
1958	562	92,935	409,578,235	883,156,058	910,693,148	1,889,460,393
1959	559	94,231	430,364,506	935,329,113	980,578,397	2,027,299,168
Printing, Publishing and Allied Industries—						
1947	2,458	52,096	101,611,652	82,585,466	178,667,051	263,632,152
1949	3,866	61,834	141,489,984	124,684,351	250,162,704	377,908,182
1951	4,019	64,694	170,828,730	152,753,412	295,642,569	452,142,515
1955	4,494	69,602	234,579,858	199,161,743	415,668,242	619,828,786
1957	4,584	74,559	274,454,964	245,024,240	481,737,438	731,199,828
1958	4,433	72,221	287,971,245	248,244,058	509,064,570	762,103,369
1959	4,359	73,926	308,264,193	267,305,034	552,887,917	823,631,668
Iron and Steel Products—						
1947	2,200	162,399	334,044,246	451,289,335	580,342,444	1,064,654,410
1949	2,347	163,622	413,227,553	619,499,256	760,934,249	1,419,145,725
1951	2,435	183,323	547,314,615	860,565,510	991,334,800	1,904,650,130
1955	2,895	181,700	667,657,079	1,005,246,993	1,199,245,953	2,242,717,918
1957	3,073	198,555	807,092,900	1,386,920,624	1,476,346,128	2,912,148,078
1958	3,254	179,440	757,173,234	1,270,710,220	1,364,093,479	2,705,682,799
1959	3,246	192,969	861,445,687	1,486,321,858	1,567,673,258	3,077,628,204
Transportation Equipment—						
1947	562	104,348	230,898,680	426,573,091	366,151,761	803,611,372
1949	596	104,750	270,852,111	584,064,330	466,529,164	1,063,211,331
1951	599	122,517	368,106,433	870,178,794	657,424,400	1,541,589,828
1955	594	131,789	490,434,996	1,117,768,836	809,748,007	1,950,410,035
1957	623	144,639	591,461,381	1,288,242,648	956,075,551	2,269,202,982
1958	626	125,976	553,425,532	1,153,569,387	883,507,106	2,075,907,784
1959	645	113,606	531,587,587	1,120,282,587	910,947,333	2,022,195,705
Non-ferrous Metal Products—						
1947	503	43,344	91,046,568	434,517,197	201,162,856	668,074,514
1949	532	44,698	114,591,106	537,218,214	289,125,045	867,043,028
1951	536	50,114	150,733,704	797,412,763	406,616,836	1,253,599,168
1955	581	53,311	201,109,879	974,792,188	590,744,048	1,626,980,855
1957	592	54,581	228,268,388	1,014,145,515	603,099,206	1,683,382,440
1958	593	51,301	226,614,472	930,931,154	534,066,580	1,531,197,041
1959	580	52,025	236,727,972	1,076,051,004	600,870,837	1,740,453,053
Electrical Apparatus and Supplies—						
1947	296	52,736	103,891,016	162,131,266	200,859,040	366,506,203
1949	365	55,916	137,278,521	212,460,413	269,341,983	486,286,355
1951	373	67,626	194,749,038	316,561,307	353,602,872	676,008,959
1955	468	76,244	264,031,474	477,655,753	469,918,651	962,615,012
1957	486	81,432	320,416,647	498,242,643	568,587,265	1,078,212,912
1958	492	74,944	316,357,773	473,902,660	523,826,941	1,015,416,736
1959	496	73,883	316,857,086	501,799,678	566,293,281	1,047,462,278
Non-metallic Mineral Products—						
1947	863	26,443	50,456,143	66,266,546	115,277,990	201,786,910
1949	1,020	28,139	64,594,354	78,401,065	143,872,615	246,457,799
1951	1,042	31,522	86,078,972	109,011,701	195,348,829	334,875,398
1955	1,171	38,949	131,006,731	174,489,301	301,656,877	514,118,801
1957	1,231	40,120	150,313,185	209,981,914	340,621,267	602,164,737
1958	1,248	40,858	161,811,627	218,683,844	369,872,669	636,696,330
1959	1,251	43,349	178,653,798	240,923,344	405,956,730	694,237,680

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[1] In 1952 gross value of products was replaced by selling value of factory shipments; see text on p. 631.

9.—Summary Statistics of Manufactures, by Industrial Group, 1947-59—concluded

Industrial Group and Year	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Gross Value of Products[1]
	No.	No.	$	$	$	$
Products of Petroleum and Coal—						
1947	80	12,769	28,689,932	257,420,851	84,073,746	361,333,008
1949	77	14,552	39,783,500	391,036,128	117,819,090	533,730,719
1951	82	15,598	51,947,890	497,982,695	179,872,590	709,550,035
1955	106	17,486	72,436,559	704,384,995	417,349,989	1,160,824,499
1957	106	17,757	88,687,774	898,830,429	534,093,249	1,491,925,837
1958	115	17,427	89,490,506	894,457,513	515,473,433	1,466,409,361
1959	112	16,775	93,896,376	936,188,338	278,544,412[2]	1,268,007,449[2]
Chemicals and Allied Products—						
1947	1,046	39,237	78,993,517	238,310,157	234,056,973	488,307,293
1949	1,037	41,328	100,690,662	280,008,945	288,171,551	587,398,215
1951	1,037	45,664	131,310,151	366,957,695	384,026,141	776,489,391
1955	1,126	51,856	185,267,943	480,104,190	528,928,509	1,044,079,000
1957	1,137	54,708	222,044,489	565,746,391	605,273,621	1,203,411,197
1958	1,143	54,570	233,819,330	589,315,994	664,853,235	1,293,331,692
1959	1,137	54,782	243,217,726	627,365,792	701,479,999	1,378,211,030
Miscellaneous Industries—						
1947	800	22,247	36,291,117	44,390,608	65,708,603	111,532,447
1949	893	26,401	51,147,475	59,778,187	94,600,066	156,363,321
1951	1,173	28,756	66,908,755	87,292,415	120,899,546	210,804,555
1955	1,524	31,511	89,239,630	114,448,353	164,876,649	283,147,866
1957	1,579	34,942	109,881,191	148,659,593	206,433,400	355,013,423
1958	1,599	36,002	119,980,755	170,066,471	220,598,291	393,572,590
1959	1,563	37,886	131,381,678	185,235,197	246,238,538	432,428,521

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[1] In 1952 gross value of products was replaced by selling value of factory shipments; see text on p. 631.

[2] Reported on a production basis. Figure for 1959 not exactly comparable with 1958 because of a change in the method of valuation; if 1958 method had been used, 1959 shipments would have totalled approximately $1,425,051,000.

Detailed Statistics by Group and Individual Industries.—Table **10** presents detailed statistics for 1958 and 1959 regarding the individual industries under which all industrial plants in Canada are classified. The industries are assembled under 17 main groups according to the Standard Industrial Classification.

In interpreting the statistics of individual industries it should be noted that the figures on employment, production, etc., do not refer to individual products but to all the products produced by an industry. For example, the value of production of the confectionery industry amounting to $136,555,219 in 1959 does not imply that this was the value of confectionery produced. What it means is that the firms whose principal product was confectionery had a value of production of $136,555,219. This figure, in addition to confectionery, includes all the subsidiary products made by these firms, such as chewing gum valued at $12,391,497, ice cream valued at $4,081,610, and bread and other bakery products valued at $1,051,477. Confectionery is also produced as a subsidiary product by firms credited to other industrial classifications. The quantities and values of the principal individual commodities produced in 1958 are given in Table **11** (1959 not available at time of going to press). Commodities produced in small quantities are not included, but the list covers approximately 75 p.c. of total production.

10.—Principal Statistics of Individual Manufacturing Industries, 1958 and 1959

Group and Industry	1958						1959					
	Estab-lishments	Em-ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments	Estab-lishments	Em-ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	$	$	$	$	No.	No.	$	$	$	$
Foods and Beverages	**8,417**	**190,445**	**623,289,596**	**2,939,312,503**	**1,536,379,118**	**4,528,889,289**	**8,165**	**192,092**	**662,539,156**	**2,967,680,288**	**1,613,441,033**	**4,673,889,281**
Bakery Products—												
Biscuits	43	5,914	15,986,092	38,010,904	41,505,215	80,612,444	44	5,897	16,917,293	39,164,213	42,539,899	82,682,904
Bread and other bakery products	2,637	35,618	106,968,772	157,267,880	172,605,555	340,918,015	2,539	36,404	112,131,527	158,665,789	180,769,353	350,305,213
Beverages—												
Breweries	55	8,148	37,708,857	55,655,573	172,383,258	232,253,488	56	8,031	40,348,477	57,936,492	183,534,883	244,766,207
Carbonated beverages	537	7,481	25,542,007	45,052,949	102,228,171	150,957,146	523	7,639	27,622,253	47,227,084	110,141,600	161,334,436
Distilled liquors	21	5,036	20,498,449	55,280,000	104,902,541	158,475,648	21	4,882	21,245,115	53,821,727	112,561,562	170,282,828
Wines	19	524	2,366,811	7,681,190	10,878,135	17,825,250	19	494	2,363,975	7,367,742	10,002,363	17,142,095
Canning and Processing—												
Fish processing	431	13,193	28,367,424	122,632,908	60,533,456	180,783,504	409	13,016	28,016,374	109,065,708	54,913,312	169,021,236
Fruit and vegetable preparations	396	16,167	43,444,553	174,886,029	97,959,887	276,697,891	378	16,039	44,730,382	168,318,947	110,282,899	286,535,237
Dairy Products—												
Butter and cheese	1,222	20,879	69,033,691	390,474,716	118,079,130	522,792,666	1,166	20,935	72,038,125	397,397,813	124,435,841	532,636,893
Cheese, process	13	1,238	4,570,376	27,860,277	6,757,567	34,834,242	13	1,084	4,623,844	27,339,503	7,294,431	34,599,820
Concentrated milk products	28	1,690	5,955,567	82,211,325	20,465,185	105,227,281	28	1,619	6,008,902	75,500,425	17,664,043	96,112,548
Dairy products, other	28	779	2,602,257	7,390,905	5,964,822	13,746,534	37	766	2,663,672	7,635,544	6,023,929	14,052,402
Milk pasteurizing	643	8,593	30,093,510	93,614,119	47,646,232	145,100,413	627	8,714	31,875,746	97,196,497	51,243,920	152,335,733
Grain Mill Products—												
Feeds, stock and poultry, prepared	891	6,655	20,538,213	193,728,346	55,314,719	251,753,902	870	6,656	21,648,372	197,906,359	59,685,786	260,922,002
Feed mills	518	1,492	3,519,155	25,756,840	6,828,625	33,158,358	517	1,511	3,665,955	26,591,788	6,900,333	34,220,444
Flour mills	71	4,412	15,949,136	173,438,129	43,364,618	218,321,216	71	4,234	16,819,241	169,769,857	51,547,538	222,897,517
Foods, breakfast	19	1,348	5,235,277	13,862,283	21,810,942	35,900,579	18	1,417	5,819,997	14,570,986	22,015,296	37,136,442
Meat Products—												
Animal oils, and fats	18	378	1,451,279	3,647,463	3,510,100	7,381,294	18	379	1,631,869	4,071,684	3,338,761	7,784,839
Sausage and sausage casings	100	1,618	5,162,294	20,694,265	11,093,288	32,116,232	90	1,575	5,238,653	19,247,487	11,475,063	31,290,912
Slaughtering and meat packing	178	25,712	102,676,636	852,842,056	196,229,499	1,050,461,233	180	26,866	115,970,251	900,504,627	222,648,120	1,135,900,829
Other Food Industries—												
Confectionery	210	9,770	26,362,140	73,712,223	66,012,005	140,707,096	212	9,488	27,175,724	70,742,851	63,384,986	136,555,219
Macaroni and kindred products	19	778	2,186,790	8,746,196	6,811,026	15,851,237	18	761	2,341,219	8,690,387	7,503,079	16,385,142
Sugar refining	11	3,270	12,673,136	91,854,350	42,384,601	137,008,506	12	3,427	13,568,028	88,349,828	25,936,632	125,731,305
Miscellaneous food preparations	299	9,752	34,397,174	223,011,577	121,110,541	345,905,114	299	10,258	38,074,162	220,596,950	127,497,404	353,257,078

Tobacco and Tobacco Products	**40**	**10,319**	**37,143,602**	**206,043,534**	**98,917,748**	**305,138,636**	**40**	**10,287**	**38,078,218**	**212,770,678**	**111,694,215**	**324,563,661**
Tobacco, cigars and cigarettes	25	8,476	32,144,308	108,871,666	88,230,628	196,947,716	24	8,356	32,988,000	111,616,950	100,985,081	212,360,337
Tobacco processing and packing	15	1,842	4,999,294	97,171,868	10,687,120	108,190,920[1]	16	1,931	5,090,218	101,153,728	10,709,134	112,203,324[1]
Rubber Products	**89**	**19,943**	**76,445,003**	**128,572,616**	**174,828,149**	**308,383,196**	**89**	**21,093**	**86,859,037**	**160,396,526**	**188,179,495**	**347,680,280**
Rubber goods, including footwear	89	19,943	76,445,003	128,572,616	174,828,149	308,383,196	89	21,093	86,859,037	160,396,526	188,179,495	347,680,280
Leather Products	**598**	**30,151**	**78,683,799**	**124,663,736**	**119,088,395**	**246,826,765**	**586**	**31,012**	**82,735,223**	**143,765,770**	**129,812,337**	**271,175,005**
Footwear, leather	247	20,131	50,274,256	70,836,470	75,268,692	147,242,239	246	20,876	53,500,469	80,256,533	83,326,329	161,459,556
Gloves and mittens, leather	62	1,509	3,245,497	4,931,274	4,866,625	9,951,908	61	1,518	3,467,693	5,274,412	5,386,461	10,550,349
Leather tanning	50	3,714	12,978,779	30,664,745	20,349,764	52,392,265	48	3,603	12,580,138	39,088,879	20,248,845	59,282,857
Other Leather Industries—												
Belting, leather	13	141	493,851	533,348	589,279	1,138,717	12	120	423,476	426,741	562,568	1,044,545
Boot and shoe findings, leather	30	785	2,061,441	4,276,026	2,965,520	7,344,982	29	770	2,199,255	4,173,320	3,523,103	7,706,884
Miscellaneous leather goods, *n.e.s.*	196	3,871	9,629,975	13,421,863	15,048,515	28,756,654	190	4,125	10,564,192	14,545,885	16,765,031	31,130,814
Textiles	**903**	**63,472**	**193,327,948**	**394,621,103**	**322,533,105**	**738,690,714**	**879**	**63,579**	**202,903,500**	**429,640,871**	**363,536,279**	**802,517,086**
Cotton Goods—												
Cotton thread	13	803	2,111,527	5,294,595	4,696,543	10,502,450	13	745	2,221,290	5,079,576	5,538,454	10,988,398
Cotton yarn and cloth	48	19,434	53,514,574	124,740,866	79,580,664	210,291,534	46	18,204	53,313,482	129,837,403	83,808,549	217,912,730
Miscellaneous cotton goods	14	586	2,006,911	5,246,427	3,704,018	9,134,676	14	567	1,927,141	4,940,836	3,527,701	8,625,134
Woollen Goods—												
Woollen cloth	55	4,658	13,146,470	23,316,201	19,715,665	44,230,042	55	4,843	14,151,409	26,087,518	21,736,658	47,684,919
Woollen yarn	38	2,753	7,492,692	19,113,603	11,387,173	31,420,547	37	2,949	8,246,090	21,815,755	15,042,672	37,690,083
Miscellaneous woollen goods	34	1,975	6,829,637	12,175,245	13,847,278	26,501,081	32	2,050	7,483,321	12,650,223	16,294,034	29,346,125
Synthetic textiles and silk	48	14,436	49,357,206	81,967,412	87,011,785	177,213,641	48	15,004	53,642,334	96,429,339	107,445,845	207,061,266
Other Primary Textiles—												
Dyeing and finishing of textiles	56	2,022	6,670,997	4,723,232	10,301,746	15,955,090	55	2,060	7,048,717	5,003,666	11,194,296	17,002,454
Narrow fabrics	47	2,051	5,801,702	9,240,644	9,994,013	19,480,056	47	2,033	5,979,441	9,677,363	10,623,370	20,398,547
Other Textile Industries—												
Automobile accessories, fabric	21	927	2,999,096	7,625,579	5,054,276	12,198,665	24	1,032	3,512,252	9,124,447	6,633,281	15,739,518
Awnings, tents and sails	137	1,674	4,211,942	8,902,617	6,384,126	15,525,554	133	1,717	4,622,405	9,368,841	7,527,663	17,094,174
Bags, cotton and jute	32	1,050	3,084,008	20,967,580	5,800,693	26,890,123	30	1,080	3,197,321	20,952,595	6,304,085	27,666,156
Carpets, mats and rugs	15	1,728	5,139,830	12,102,766	10,248,115	23,627,619	13	1,695	5,551,922	12,992,806	12,048,940	25,543,465
Cordage, rope and twine	14	1,067	3,727,459	8,167,755	7,336,468	15,969,624	13	1,058	3,815,802	9,081,210	7,227,678	16,299,540
Embroidery, pleating, hemstitching, etc.	137	1,484	3,679,101	2,529,579	5,783,735	8,392,601	134	1,457	3,661,925	2,312,262	5,955,958	8,340,725
Oilcloth, linoleum and other coated fabrics	19	2,902	11,906,807	21,119,350	18,691,209	40,930,445	19	3,102	12,902,383	24,407,858	20,367,616	43,789,538
Miscellaneous textiles, *n.e.s.*	175	3,922	11,647,989	27,387,552	22,995,598	50,426,966	166	3,983	11,626,265	28,879,173	22,259,479	51,334,314

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[1] Reported on a production basis.

10.—Principal Statistics of Individual Manufacturing Industries, 1958 and 1959—continued

Group and Industry	1958						1959					
	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	$	$	$	$	No.	No.	$	$	$	$
Knitting Mills	**321**	**20,936**	**49,829,169**	**88,610,388**	**83,975,480**	**173,576,575**	**319**	**20,992**	**52,187,295**	**98,658,641**	**90,748,070**	**189,267,687**
Hosiery	147	8,713	21,443,730	27,280,438	35,459,739	63,796,722	143	8,352	21,812,072	29,525,057	39,373,728	68,302,092
Knitted goods	174	12,223	28,385,439	61,329,950	48,515,741	109,779,853	176	12,640	30,375,223	69,133,584	51,374,342	120,965,595
Clothing	**2,460**	**87,740**	**217,972,885**	**389,243,696**	**355,056,972**	**748,309,459**	**2,359**	**87,678**	**227,512,941**	**401,131,919**	**367,224,758**	**765,817,930**
Men's, Women's and Children's Clothing—												
Children's factory	186	7,866	16,980,663	36,660,940	28,832,605	65,493,820	180	8,120	18,217,996	40,202,467	30,223,061	69,988,424
Men's factory	546	29,969	74,013,879	144,479,417	116,633,091	264,293,851	513	29,209	76,011,271	144,990,401	116,778,300	260,485,879
Women's factory	660	25,676	68,469,880	132,488,602	117,611,885	250,457,423	634	25,842	71,694,239	137,934,277	123,058,229	260,575,604
Contractors, men's	145	4,950	9,392,482	1,191,810	11,256,487	12,611,279	136	4,910	9,751,442	1,276,343	11,672,978	13,115,332
Contractors, women's	145	3,698	6,314,947	714,018	7,948,893	8,785,665	144	3,805	6,813,462	813,367	8,807,341	9,727,430
Miscellaneous Clothing—												
Corsets	44	4,001	8,872,035	12,684,558	18,989,504	31,211,587	44	4,142	9,639,992	13,818,849	19,629,059	33,391,017
Fur dressing and dyeing	14	908	2,924,699	895,585	4,524,486	5,508,408	15	993	3,412,419	1,253,798	5,149,138	6,503,695
Fur goods	493	4,326	14,932,862	37,667,750	23,185,580	61,124,191	480	4,261	15,363,230	38,202,979	25,230,353	62,623,385
Gloves and mittens, fabric	12	669	1,182,646	2,248,695	2,112,340	4,348,761	13	785	1,480,729	2,444,357	2,418,262	4,826,742
Hats and caps	140	4,073	10,747,521	12,528,653	16,542,793	29,272,149	130	4,017	10,959,726	12,798,590	16,985,993	29,964,551
Oiled and waterproofed clothing	7	283	806,583	1,668,185	1,630,790	3,350,529	6	260	749,952	1,392,402	1,434,371	2,751,068
Clothing, *n.e.s.*	68	1,321	3,334,688	6,015,483	5,788,518	11,851,796	64	1,334	3,418,483	6,004,089	5,837,673	11,864,803
Wood Products	**9,848**	**120,922**	**369,581,549**	**717,462,536**	**605,677,512**	**1,343,593,579**	**9,808**	**123,791**	**387,861,727**	**761,353,905**	**644,855,992**	**1,425,135,795**
Furniture	1,820	31,505	97,807,441	149,036,129	156,566,548	308,815,752	1,897	32,499	106,404,211	161,032,692	167,220,584	329,845,815
Saw and Planing Mills—												
Flooring, hardwood	26	1,517	4,476,094	10,115,690	7,252,248	17,736,175	23	1,462	4,494,786	9,914,005	6,476,193	16,212,518
Sash, door and planing mills	1,555	17,956	54,759,186	141,193,742	92,918,992	236,990,148	1,543	18,161	57,788,412	152,914,213	98,207,684	254,861,818
Sawmills	5,769	47,763	142,700,044	300,342,531	236,752,567	546,299,359[1]	5,678	48,659	144,759,203	313,399,108	248,582,490	571,822,783[1]
Veneer and plywood	71	10,806	37,350,752	66,002,164	61,082,494	129,954,480	72	11,607	40,657,509	70,336,769	68,544,811	141,573,444
Other Wood Industries—												
Beekeepers' and poultrymen's supplies	7	53	111,147	176,842	139,864	329,335	7	63	134,543	195,170	160,555	368,494
Boxes and baskets, wood	158	3,155	8,137,516	10,490,635	12,031,224	22,963,139	150	3,154	8,497,345	11,206,399	12,824,409	24,500,238
Cooperage	49	536	1,553,468	3,994,877	2,038,287	6,101,242	48	547	1,613,116	3,530,842	2,104,552	5,731,375
Excelsior	9	91	222,734	219,614	309,250	545,786	10	88	241,839	206,766	346,456	570,853
Lasts, trees and shoe findings	15	604	1,651,707	1,906,726	2,885,779	4,821,473	15	669	1,718,779	2,089,404	2,949,427	5,104,214
Morticians' goods	63	1,374	3,877,262	4,716,864	6,017,002	10,959,594	61	1,358	3,955,949	4,728,812	6,350,511	11,208,831

Woodenware	25	575	1,231,903	1,752,857	1,861,389	3,682,404	23	592	1,391,733	1,949,193	2,247,575	4,286,238
Wood turning	63	1,373	3,576,160	4,373,220	5,518,041	10,021,972	63	1,449	3,815,850	4,346,049	5,733,528	10,323,795
Miscellaneous wood products, *n.e.s.*	218	3,614	12,126,135	23,140,645	20,303,827	44,372,720	218	3,483	12,388,452	25,504,483	23,107,217	48,725,379
Paper Products	**562**	**92,935**	**409,578,235**	**883,156,058**	**910,693,148**	**1,889,460,393**	**559**	**94,231**	**430,364,506**	**935,329,113**	**980,578,397**	**2,027,299,168**
Boxes and bags, paper	223	16,596	57,658,588	168,339,354	108,276,046	277,464,661	228	17,561	63,296,980	188,877,337	121,017,281	309,442,911
Pulp and paper	128	64,084	307,415,615	597,804,877	702,950,789	1,394,679,180	127	65,028	322,311,304	628,269,346	761,035,456	1,499,585,644
Roofing paper	22	2,511	10,374,639	24,199,884	21,362,600	45,892,999	19	2,176	9,625,754	23,682,362	17,000,332	41,409,899
Miscellaneous paper goods	189	9,744	34,129,393	92,811,943	78,103,713	171,423,553	185	9,466	35,130,468	94,500,068	81,525,328	176,860,714
Printing, Publishing and Allied Industries	**4,433**	**72,221**	**287,971,245**	**248,244,058**	**509,064,570**	**762,103,369**	**4,359**	**73,926**	**308,264,193**	**267,305,034**	**552,887,917**	**823,631,668**
Commercial Printing—												
Printing and bookbinding	1,829	26,422	99,473,204	95,823,864	161,100,612	258,323,523	1,842	27,097	106,671,271	104,243,189	178,605,478	283,848,120
Trade composition	50	1,036	4,757,423	646,306	6,544,315	7,260,903	54	1,106	5,391,374	612,554	7,950,237	8,603,061
Engraving, Sterotyping and Allied Industries—												
Engraving, stereotyping and electrotyping	158	4,057	20,319,633	7,349,947	30,582,276	38,370,291	157	4,146	21,620,213	8,257,794	32,221,552	40,628,328
Lithographing	94	4,287	18,581,932	23,732,622	30,216,707	54,345,269	104	4,544	20,248,394	26,571,749	33,009,087	59,231,245
Printing and Publishing—												
Printing and publishing	746	30,557	127,741,392	86,411,545	238,784,246	327,687,195	740	30,877	135,371,595	91,392,852	253,712,698	347,705,153
Publishing (only) of periodicals	1,556	5,862	17,097,661	34,279,774	41,836,414	76,116,188[1]	1,462	6,156	18,961,346	36,226,896	47,388,865	83,615,761[1]
Iron and Steel Products	**3,254**	**179,440**	**757,173,234**	**1,270,710,220**	**1,364,093,479**	**2,705,682,799**	**3,246**	**192,969**	**861,445,687**	**1,486,321,858**	**1,567,673,258**	**3,077,628,204**
Agricultural implements	71	11,011	47,344,429	77,274,314	60,536,739	133,145,309	71	13,579	61,741,134	101,278,108	78,006,598	170,742,821
Boilers, tanks and platework	103	7,949	34,535,930	53,265,040	52,986,057	108,888,919	99	7,666	33,403,400	54,463,002	53,553,524	107,881,063
Bridge and structural steel work	65	14,531	66,027,964	100,702,283	108,320,903	210,882,702[1]	61	14,725	69,341,631	102,852,464	112,796,871	217,650,544[1]
Castings, iron	189	15,081	61,177,434	132,575,064	114,962,422	253,444,707	184	15,711	67,876,410	137,379,005	117,290,636	254,948,289
Hardware, tools and cutlery	430	13,448	51,129,187	55,935,832	100,663,656	158,197,433	425	14,186	56,324,734	64,550,365	106,251,322	170,483,914
Heating and cooking apparatus	126	8,670	32,868,116	65,029,147	62,454,754	129,265,079	125	9,136	36,262,945	74,883,959	71,437,085	144,205,438
Machinery, household, office and store	71	8,557	33,950,426	64,616,295	68,096,143	135,976,609	72	8,456	35,962,341	69,880,576	70,368,271	141,218,274
Machinery, industrial	379	23,347	95,602,417	133,424,224	167,442,946	311,094,856	373	24,805	107,314,000	147,849,567	199,929,990	343,494,959
Machine shops	700	7,009	26,519,406	20,663,688	37,836,144	59,785,696	696	7,167	28,442,368	22,898,031	44,096,614	67,700,975
Machine tools	14	1,041	4,544,639	5,820,566	4,478,466	11,355,414	13	1,014	4,532,800	5,118,182	5,606,880	10,892.562
Primary iron and steel	50	30,261	148,023,062	250,669,538	304,923,587	590,317,696	49	34,942	182,910,151	354,160,093	393,807,515	782,494,003
Sheet metal products	473	19,107	78,135,571	175,251,811	154,400,230	333,264,998	490	20,781	90,121,171	196,717,228	170.386,455	365,558,129
Wire and wire goods	150	9,219	38,213,572	82,635,926	62,666,734	148,798,469	151	10,510	45,675,566	98,130,789	71,998,710	169,927,054
Miscellaneous iron and steel products	433	10,209	39,101,081	52,846,492	64,324,698	121,264,912	437	10,291	41,537,036	56,160,489	72,142,787	130,430,179
Transportation Equipment	**626**	**125,976**	**553,425,532**	**1,153,569,387**	**883,507,106**	**2,075,907,784**	**645**	**113,606**	**531,587,587**	**1,120,282,587**	**910,947,333**	**2,022,195,705**
Aircraft and parts	75	39,932	182,276,877	176,538,577	281,131,994	462,331,245[1]	78	28,516	142,484,904	127,937,264	195,911,616	327,533,631[1]
Bicycles and parts	5	672	2,497,715	2,211,143	4,404,902	6,624,646	4	741	3,086,697	2,420,482	5,944,202	7,610,181
Boat building	215	1,733	5,273,824	5,191,636	7,139,095	12,291,961	225	1,774	5,555,180	5,923,804	8,410,720	14,589,718

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[1] Reported on a production basis.

10.—Principal Statistics of Individual Manufacturing Industries, 1958 and 1959—continued

Group and Industry	1958						1959					
	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	$	$	$	$	No.	No.	$	$	$	$
Transportation Equipment—concluded												
Motor vehicles	15	26,396	129,718,693	571,501,488	253,945,274	847,342,113	16	28,461	146,956,325	591,068,962	353,765,632	928,949,639
Motor vehicle parts	206	18,132	77,730,771	155,921,088	133,476,810	295,741,107	211	18,885	85,198,507	173,770,732	151,495,727	323,420,389
Railway rolling-stock	29	22,374	87,953,769	188,155,709	103,799,162	295,961,250[1]	29	20,248	83,680,309	163,814,494	99,487,140	266,868,100[1]
Shipbuilding	65	16,132	65,883,090	50,673,132	95,602,037	148,330,354[1]	65	14,291	62,100,539	50,452,695	90,628,521	143,126,746[1]
Miscellaneous transportation equipment	16	605	2,090,793	3,376,614	4,007,832	7,285,108	17	690	2,525,126	4,894,154	5,303,775	10,097,301
Non-ferrous Metal Products	**593**	**51,301**	**226,614,472**	**930,931,154**	**534,066,580**	**1,531,197,041**	**580**	**52,025**	**236,727,972**	**1,076,051,004**	**600,870,837**	**1,740,453,053**
Aluminum products	95	6,605	28,544,154	60,434,728	36,832,967	97,883,277	91	6,787	29,995,589	63,956,586	42,473,372	106,411,905
Brass and copper products	155	9,034	36,441,269	107,392,740	68,161,993	176,400,890	156	9,196	39,542,605	124,849,456	75,762,348	200,287,367
Jewellery and silverware	221	4,739	14,935,765	30,147,682	24,085,298	53,898,979	213	4,318	14,622,778	30,654,887	23,986,910	54,703,327
Non-ferrous metal smelting and refining	25	26,959	131,081,250	693,796,744	378,451,364	1,135,770,506[1]	24	27,746	137,227,215	815,787,699	429,888,766	1,307,996,841
White metal alloys	64	2,825	10,576,075	30,305,392	18,505,709	50,177,719	64	2,919	10,843,456	32,862,935	19,973,054	53,554,334
Miscellaneous non-ferrous metal products	33	1,139	5,035,959	8,853,868	8,029,249	17,065,670	32	1,059	4,496,329	7,939,441	8,786,387	17,499,279
Electrical Apparatus and Supplies	**492**	**74,944**	**316,357,773**	**473,902,660**	**523,826,941**	**1,015,416,736**	**496**	**73,883**	**316,857,086**	**501,799,678**	**566,293,281**	**1,047,462,278**
Batteries	31	2,183	8,494,204	22,184,794	15,387,640	39,604,763	29	2,223	9,133,750	23,477,934	19,225,772	42,106,864
Refrigerators, vacuum cleaners and appliances	75	8,471	33,631,510	70,624,131	70,893,553	145,236,530	77	9,246	37,923,171	81,433,814	82,339,474	161,393,328
Machinery, heavy electrical	80	20,074	97,573,375	97,534,523	139,709,541	244,743,678	86	17,357	81,372,760	92,568,152	143,156,069	233,675,890
Telecommunication equipment	127	19,100	75,497,784	119,506,470	122,008,393	237,994,688	123	18,931	77,930,395	117,599,255	117,788,500	225,070,764
Miscellaneous electrical apparatus and supplies	179	25,116	101,160,900	164,052,742	175,827,814	347,837,077	181	26,126	110,497,010	186,720,523	203,783,466	385,215,432
Non-metallic Mineral Products	**1,248**	**40,858**	**161,811,627**	**218,683,844**	**369,872,669**	**636,696,330**	**1,251**	**43,349**	**178,653,798**	**240,923,344**	**405,956,730**	**694,237,680**
Abrasives, artificial	18	2,314	10,702,296	14,550,336	18,573,824	37,211,006	18	2,522	11,853,197	17,783,503	21,249,607	44,226,296
Asbestos products	16	1,924	7,545,988	12,236,863	14,888,807	27,609,862	16	2,076	9,154,154	13,676,667	17,182,668	30,883,070
Cement, hydraulic	19	3,485	16,359,760	14,758,308	66,176,534	99,943,850	19	3,516	17,174,256	13,269,944	67,612,521	98,777,937
Clay products from domestic clay	112	4,249	15,734,143	1,065,692	34,187,072	41,709,903	116	4,471	17,150,222	1,371,977	35,592,292	42,515,448

Clay products from imported clay	36	2,173	8,613,571	6,692,281	16,088,014	23,686,970	36	2,042	8,396,945	6,021,398	17,046,941	23,946,944
Concrete products	684	11,819	44,807,114	91,364,354	91,419,385	186,235,051	682	12,566	50,099,502	99,828,430	102,590,965	207,906,250
Glass and glass products	102	7,879	30,328,355	36,085,066	53,165,011	93,818,849	101	8,842	34,967,391	42,896,582	61,670,605	107,737,430
Gypsum products	13	1,604	6,806,213	15,725,705	18,498,829	35,719,283	13	1,626	7,181,793	15,966,506	18,234,955	35,461,217
Lime	40	1,172	4,362,549	1,367,999	14,028,375	20,261,610	40	1,275	4,875,819	1,455,072	15,602,172	22,130,956
Salt	13	870	3,575,977	2,748,081	13,139,461	16,957,157	15	926	3,903,318	2,419,626	15,843,873	20,224,407
Sand-lime brick	4	106	378,561	231,362	631,131	913,483	4	103	405,635	308,792	703,112	1,064,256
Stone products	137	2,157	8,355,347	10,567,422	17,573,288	29,104,039	136	2,242	8,880,122	11,048,447	18,020,152	30,378,740
Miscellaneous non-metallic mineral products	54	1,106	4,241,753	11,290,375	11,502,938	23,525,267	55	1,142	4,611,444	13,876,400	14,606,867	28,984,729
Products of Petroleum and Coal	**115**	**17,427**	**89,490,506**	**894,457,513**	**515,473,433**	**1,466,409,361**	**112**	**16,775**	**93,896,376**	**936,188,338**	**278,544,412**	**1,268,007,449**
Coke and gas products	16	2,455	10,871,876	56,272,204	21,515,263	82,788,690[1]	13	2,171	10,340,973	64,460,321	26,894,464	96,410,654
Petroleum products	71	14,490	76,643,818	829,920,509	487,676,382	1,368,649,087[1]	69	14,142	81,554,767	863,895,812	244,973,628[2]	1,156,912,043[1,2]
Miscellaneous products of petroleum and coal	28	482	1,974,812	8,264,800	6,281,788	14,971,584	30	462	2,000,636	7,832,195	6,676,320	14,684,752
Chemicals and Allied Products	**1,143**	**54,570**	**233,819,330**	**589,315,994**	**664,853,235**	**1,293,331,692**	**1,137**	**54,782**	**243,217,726**	**627,365,792**	**701,479,999**	**1,378,211,030**
Acids, alkalies and salts	59	10,073	49,780,443	111,593,209	126,831,706	260,967,832	57	10,452	53,527,783	127,361,965	142,409,802	297,482,108
Fertilizers	45	2,993	13,424,810	48,593,959	37,209,183	89,145,796	45	3,001	13,804,715	50,470,120	40,732,905	96,278,304
Medicinal and pharmaceutical preparations	196	7,996	29,847,315	44,289,303	111,162,375	155,006,181	188	8,146	31,133,539	48,510,551	116,977,106	164,733,036
Paints, varnishes and lacquers	131	6,234	25,221,595	70,560,548	73,063,764	143,096,594	134	6,340	26,624,119	72,959,855	74,316,626	148,618,625
Primary plastics	34	3,435	16,255,231	52,091,681	42,565,649	97,802,453	34	3,469	17,079,990	57,802,935	43,779,167	103,538,744
Soaps, washing compounds and cleaning preparations	137	3,882	17,020,895	55,530,784	76,077,926	132,022,831	134	4,029	18,371,984	57,140,830	76,921,806	137,077,986
Toilet preparations	83	2,393	7,361,071	18,628,395	33,659,484	51,856,286	82	2,605	8,249,904	19,949,461	35,023,620	54,536,984
Vegetable oils	11	614	2,675,234	45,502,890	8,157,210	53,795,209	10	625	2,853,314	46,989,078	9,914,597	57,677,128
Other Chemical Industries—												
Adhesives	28	642	2,556,561	7,120,720	6,872,624	14,380,563	31	629	2,683,622	7,597,580	6,807,070	14,638,817
Coal tar distillation	10	572	2,761,006	7,611,604	3,463,246	12,018,034	8	491	2,752,373	7,647,291	4,849,644	13,267,489
Gases, compressed	57	1,477	6,383,678	3,991,445	18,795,761	23,742,234	57	1,504	6,658,087	4,536,655	21,594,318	27,075,869
Inks	42	1,015	4,059,844	7,486,995	9,837,464	17,481,629	44	1,067	4,457,242	8,548,391	10,789,590	19,475,905
Polishes and dressings	43	833	3,301,694	10,705,496	13,606,383	24,508,033	42	832	3,466,167	10,922,806	13,874,170	24,723,562
Miscellaneous chemical products	267	12,411	53,169,953	105,608,965	103,550,460	217,508,017	271	11,592	51,554,787	106,928,274	103,489,578	219,086,473
Miscellaneous Industries	**1,599**	**36,002**	**119,980,755**	**170,066,471**	**220,598,291**	**393,572,590**	**1,563**	**37,886**	**131,381,678**	**185,235,197**	**246,238,538**	**432,428,521**
Brooms, brushes and mops	95	2,130	5,858,945	8,645,863	10,031,186	18,997,463	97	2,187	6,297,172	8,577,784	10,823,023	19,499,791
Clocks, watches and watch cases	37	1,069	3,860,418	8,214,018	7,395,533	15,784,093	37	999	3,725,475	8,018,809	7,537,708	15,739,349
Fountain pens and pencils	17	1,138	3,382,285	5,504,538	6,925,517	12,654,239	16	1,082	3,561,982	5,542,835	7,733,578	13,232,667

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[1] Reported on a production basis.

[2] Figure for 1959 not exactly comparable with 1958 because of a change in the method of valuation; if 1958 method had been used, 1959 shipments would have totalled approximately $1,425,051,000.

10.—Principal Statistics of Individual Manufacturing Industries, 1958 and 1959—concluded

Group and Industry	1958						1959					
	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	$	$	$	$	No.	No.	$	$	$	$
Miscellaneous Industries—concluded												
Instruments and related products	83	6,960	30,243,321	41,435,857	50,483,863	91,616,218	79	7,075	31,364,955	42,406,522	54,550,893	95,968,650
Musical instruments	24	1,433	4,817,056	5,079,027	11,183,168	16,352,254	24	1,461	5,274,540	5,614,610	12,456,460	18,129,013
Ophthalmic goods	39	1,080	3,251,950	3,172,989	3,844,548	7,025,458	38	1,039	3,163,205	3,380,748	3,903,702	7,464,348
Orthopaedic and surgical appliances	36	350	997,322	863,888	1,741,009	2,624,405	36	343	1,009,996	863,030	1,667,973	2,541,067
Plastics products	198	5,186	16,307,962	36,855,300	36,750,031	73,857,408	204	6,002	19,476,723	44,430,619	41,601,355	85,808,972
Sporting goods	95	2,152	6,315,049	8,018,530	11,929,399	20,453,260	94	2,452	7,705,441	9,777,475	17,179,918	26,804,673
Toys and games	71	2,246	5,746,701	11,170,449	11,704,507	22,843,375	69	2,634	6,645,893	12,568,580	12,830,582	25,148,933
Typewriter supplies	9	418	1,405,117	2,978,720	2,989,893	6,043,444	9	418	1,454,254	3,290,258	3,265,130	6,563,245
Other Miscellaneous Industries—												
Artificial flowers and feathers	42	494	1,090,798	1,345,310	1,927,031	3,268,094	38	488	1,148,039	966,390	2,383,636	3,364,737
Buttons, buckles and fasteners	44	1,522	4,515,296	5,558,366	7,597,249	13,086,245	44	1,536	4,730,841	5,964,063	7,690,111	13,952,033
Candles	21	250	763,136	1,269,446	1,760,526	3,042,627	23	251	839,725	1,238,045	1,726,317	3,027,059
Hair goods	12	138	392,789	661,197	598,173	1,293,710	10	94	329,381	387,865	487,960	881,747
Ice, artificial	48	397	1,323,177	247,728	2,587,333	3,244,229	46	387	1,371,968	241,470	2,510,016	3,169,839
Lamps, electric and lamp shades	66	1,193	3,006,376	6,281,026	5,940,178	12,460,943	59	1,189	3,284,710	6,829,630	6,406,806	13,371,570
Models and patterns, excluding paper	80	558	2,515,262	979,352	3,677,894	4,672,217	75	637	3,080,362	1,152,658	4,786,218	6,023,461
Pipes, lighters and smokers' supplies	14	151	473,069	983,820	1,020,034	2,143,514	13	153	497,184	1,028,483	1,081,491	2,435,919
Signs, electric, neon and other	356	3,638	13,467,853	11,202,953	22,240,362	34,007,650	346	3,859	15,126,076	12,443,753	25,292,976	38,332,099
Stamps and stencils, rubber and metal	69	927	3,277,528	1,963,875	4,778,438	6,866,633	67	968	3,575,234	2,282,475	4,997,480	7,367,331
Statuary, art goods, regalia and novelties	95	807	1,962,681	1,771,577	2,992,792	4,816,392	91	776	2,080,397	1,976,624	3,600,180	5,588,008
Umbrellas	8	114	273,079	528,728	474,851	995,550	8	126	294,810	559,305	537,906	1,092,807
Miscellaneous industries	40	1,651	4,733,585	5,333,414	10,024,776	15,423,169	40	1,730	5,343,315	5,693,166	11,187,119	16,921,203
Totals, All Industries	**36,741**	**1,289,602**	**4,802,496,260**	**11,821,567,471**	**9,792,505,931**	**22,163,186,308**	**36,193**	**1,303,956**	**5,073,073,706**	**12,552,200,543**	**10,320,962,881**[1]	**23,311,601,481**[1]

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[1] Figure for 1959 not exactly comparable with 1958 because of a change in the method of valuation for petroleum products; see footnote [2], p. 649.

11.—Quantity and Value of the Principal Commodities Produced or Shipped by the Manufacturing Industries, 1958

NOTE.—All values in this table are for factory shipments except those marked with an asterisk, which are for gross value of products.

Group and Commodity	Unit of Measure	1958	
		Quantity	Value
			$
Foods—			
Biscuits, all kinds	lb.	245,846,130	74,449,128
Bread	ton	824,976	203,658,715
Butter, factory made	lb.	340,278,819	215,212,640
Cheese, factory made	"	175,798,474	63,541,070
Coffee, instant	"	8,192,488	25,318,260
Coffee and tea, blended, roasted and packed	"	123,008,323	110,122,000
Confectionery, all kinds	"	211,617,682	96,109,690
Cream, sold by dairy factories	...	...	47,666,732
Feed, chopped grain	ton	528,212	28,138,874
Feeds, stock and poultry, prepared	"	2,953,181	233,310,645
Fish, canned and otherwise prepared	...	...	84,008,000
Flour, wheat	cwt.	40,688,409	167,829,519
Fruits and vegetables, canned	lb.	619,175,248	82,460,917
Fruits and vegetables, frozen	"	71,963,885	12,402,724
Ice cream, factory made	gal.	34,176,417	58,824,993
Jams, jellies and marmalades	lb.	110,277,928	23,199,523
Lard	"	114,822,946	17,771,703
Margarine and margarine substitutes	"	148,583,672	34,893,703
Meats, canned, including poultry, pastes, etc.	"	80,045,085	38,103,192
Meats, cooked, including sausage, wieners, etc.	"	298,809,183	128,625,694
Meats, cured and smoked	"	268,206,386	146,727,558
Meats, sold fresh and frozen, including poultry	"	1,633,097,557	620,976,340
Milk, sold by dairy factories	gal.	363,081,221	284,610,264
Milk, evaporated and condensed	lb.	331,296,343	42,322,165
Pickles, relishes and catsup	...	...	31,025,322
Pies, cakes and pastry	...	...	89,743,049
Powders, edible (custard, jelly, milk, etc.)	...	...	63,596,408
Shortening	lb.	167,884,228	39,182,840
Soups, canned (except infants')	"	264,621,125	47,845,075
Sugar, granulated (cane and beet)	"	1,393,526,353	111,991,794
Beverages—			
Beer, ale, stout and porter (sales, incl. duties and taxes)	gal.	219,848,237	361,609,941
Beverage spirits sold (net sales)	pf. gal.	15,777,160	125,562,857
Carbonated beverages	gal.	146,305,181	133,187,246
Wine (sold)	Imp. gal.	6,585,316	17,553,056
Tobacco and Tobacco Products—			
Cigarettes (incl. duties and taxes)	'000	32,777,573	439,366,706
Cigars (incl. duties and taxes)	"	319,595	22,518,284
Tobacco, chewing, smoking and snuff (incl. duties and taxes)	lb.	23,500,881	60,603,860
Tobacco, raw leaf, processed (incl. duties and taxes)	"	160,225,608	108,190,921*
Textiles—			
Bags, cotton and jute	No.	132,855,102	23,084,382
Blankets	...	...	14,493,568
Carpets, mats and rugs	...	...	26,837,589
Cotton fabrics	...	...	110,559,996
Synthetic woven fabrics, all types	yd.	85,243,148	57,121,657
Tire fabrics	lb.	24,590,082	22,887,901
Twine and cordage	...	...	14,952,290
Woven fabrics, wool or containing wool	...	...	38,466,567
Yarns, cotton, rayon, wool, etc. (for sale)	...	...	138,467,687
Clothing—			
Coats and overcoats, cloth, men's and youths'	No.	477,945	14,173,031
Coats, wool, women's and misses'	"	1,341,553	32,628,970
Coats, fur, women's (factory made)	"	210,602	48,661,786
Short coats (including windbreakers, mackinaws, parkas, leather coats, etc.)	doz.	488,301	39,175,658
Dresses, women's and misses'	No.	12,217,128	85,083,710
Footwear, leather	pr.	37,325,291	138,292,220
Footwear, rubber	"	9,582,023	24,112,110
Gloves and mittens, all kinds	doz. pr.	1,785,251	14,982,042
Hats and caps, men's	doz.	730,508	11,473,305
Hats, women's and children's	"	423,374	13,264,543
Hosiery, all kinds	doz. pr.	10,945,429	59,569,652
Shirts, fine, work and sport	doz.	2,710,159	60,281,738
Sport suits, slacks and other sport clothing, *n.e.s.*	...	...	27,316,645
Suits, men's and youths', fine woollen	No.	1,679,870	58,429,372
Underwear	...	...	53,351,118

11.—Quantity and Value of the Principal Commodities Produced or Shipped by the Manufacturing Industries, 1958—continued

Group and Commodity	Unit of Measure	1958	
		Quantity	Value
			$
Wood Products—			
Boxes, wooden	...	...	11,420,413
Lumber, planed	M ft. b.m.	1,307,498	97,746,648
Lumber, sawn	"	7,180,113	459,975,299*
Pulp, wood, made for sale	ton	1,653,408	203,975,265
Sash, doors and other mill work	...	...	78,049,601
Paper Products—			
Bags, paper	...	...	57,876,185
Boxes, paper	...	...	197,939,841
Paper boards, all types (basic)	ton	1,188,650	152,810,753*
Paper, book and writing (basic)	"	344,622	91,079,353*
Paper, newsprint (basic)	"	6,030,930	699,906,388*
Paper, wrapping (basic)	"	292,727	64,650,624*
Printing, Publishing and Allied Industries—			
Books and catalogues, printed and bound	...	...	39,694,305
Other advertising matter, printed	...	...	60,812,195
Periodicals printed for publishers	...	...	28,917,670
Periodicals Printed by Publishers—			
Subscriptions and sales	...	...	76,283,165
Gross revenue from advertising	...	...	207,678,610
Other printed matter: sheet forms, menus, bank notes, programs, etc.	...	...	114,311,993*
Iron and Steel Products—			
Bars, iron and steel, hot-rolled (sold)	ton	585,016	86,215,757
Boilers, heating and power	...	...	27,518,710
Castings, grey iron, made for sale	...	...	31,855,776
Farm implements and parts	...	...	125,853,584
Forgings, steel and other	...	...	26,424,336
Hardware, builders', pole line and other	...	...	51,437,000
Machinery, industrial, household, office and store, and parts	...	...	681,005,000
Pig iron (sold)	ton	429,708	24,878,802
Pipes, tubing and fittings, iron and steel	...	...	193,917,000
Rolled iron and steel forms, semi-finished (sold)	net ton	267,422	28,519,772
Sheets, bars and other cold-rolled products (sold)	"	851,442	156,119,583
Steel ingots and castings (sold)	"	105,251	42,581,094
Steel shapes erected, buildings, bridges, etc.	"	430,623	154,719,352*
Steel shapes, structural, made in primary mills	"	225,295	29,140,873
Stoves, coal, wood, electric and gas	...	...	53,519,506
Tools and implements, hand, all kinds and parts	...	...	36,157,432
Wire, wire rope and cable, steel	...	...	49,682,340
Transportation Equipment—			
Aircraft, completed in year	...	...	189,947,132*
Automobiles, commercial	No.	60,857	125,113,297
Automobiles, passenger	"	293,633	582,489,081
Automobile parts and accessories, including tires	...	...	496,259,000
Buses	No.	442	10,378,051
Cars, railway, complete, freight and passenger	"	5,313	64,126,138*
Locomotives, diesel-electric, new	"	417	75,229,711*
Ships and ship repairs	...	...	176,597,923*
Non-ferrous Metal Products—			
Jewellery	...	...	24,867,243
Kitchenware, aluminum	...	...	7,477,151
Silverware	...	...	8,154,997
Smelter and refinery products	...	...	1,135,770,506*
Electrical Apparatus and Supplies—			
Batteries, electric, storage	...	...	26,409,769
Radio receiving sets, complete	No.	745,318	25,510,943
Refrigerators, household, mechanical	"	226,523	39,759,101
Television sets	"	432,318	67,669,153
Wires and cables, electric	...	...	136,812,123
Non-metallic Mineral Products—			
Abrasives, artificial	ton	187,035	22,670,900
Coke, gas-house	"	3,483,105	52,641,959*
Concrete, ready-mixed	...	...	91,361,517
Gas, manufactured and natural (sold)	M cu. ft.	211,751,484	121,249,692*
Glass, pressed and blown (bottles, sealers, ovenware, etc.)	...	...	55,868,774

11.—Quantity and Value of the Principal Commodities Produced or Shipped by the Manufacturing Industries, 1958—concluded

Group and Commodity	Unit of Measure	1958 Quantity	1958 Value
			$
Chemicals and Allied Products—			
Calcium and sodium compounds	...	...	59,313,000
Fertilizers, mixed	...	...	40,001,000
Medicinal and pharmaceutical preparations	...	...	139,621,000
Paints, enamels and varnishes	...	...	135,207,000
Synthetic resins	...	...	66,441,000
Soaps and synthetic detergents	lb.	335,000,000	91,062,000
Toilet preparations	...	...	65,409,053
Miscellaneous—			
Bags, hand and hand luggage	...	...	15,616,693
Brooms and household brushes	doz.	821,507	5,330,867
Buildings (houses, etc.), prefabricated, wood and metal	...	...	20,501,763
Cans, metal, for food	...	...	73,519,793
Furniture, wood and metal, including beds and couches	...	...	226,796,403
Gasoline	bbl.	91,872,967	635,420,469*
Leather, shoe	...	...	40,511,264
Mattresses	...	...	24,207,840
Mops, floor	...	...	3,229,369
Oil, fuel (made for sale)	bbl.	115,073,882	518,682,557*
Pianos, organs and parts	...	...	5,391,335
Scientific and professional equipment	...	...	74,638,994
Sporting goods	...	...	24,422,166
Springs, bed and other furniture	...	...	14,574,031
Toys and games	...	...	29,028,231

Subsection 2.—Manufactures classified by Origin of Materials

The distinction made between farm materials of Canadian and foreign origin is based on whether the materials are indigenous to Canada rather than on their actual source. Thus, the industries included in the foreign origin classes are those depending upon materials that cannot be grown in Canada, such as tea, coffee, spices, cane sugar, rice, rubber, cotton, etc. Industries included in the Canadian origin classes may, however, be using large quantities of imported materials.

12.—Principal Statistics of Manufacturing Industries classified according to Origin of Materials Used, by Main Group, 1958

Origin of Materials Used	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value added by Manufacture	Selling Value of Factory Shipments
	No.	No.	$	$	$	$
Farm origin	9,862	310,977	980,342,923	3,716,401,997	2,177,421,498	5,972,728,027
Mineral origin	7,404	539,105	2,323,833,949	5,436,252,397	4,742,809,500	10,518,252,826
Forest origin	14,685	282,021	1,046,811,396	1,841,512,705	1,994,852,954	3,956,787,050
Marine origin	431	13,193	28,367,424	122,632,908	60,533,456	180,783,504
Wildlife origin	507	5,234	17,857,561	38,563,335	27,710,066	66,632,599
Mixed origin	3,852	139,072	405,283,007	666,204,129	789,178,457	1,468,002,302
Grand Totals	**36,741**	**1,289,602**	**4,802,496,260**	**11,821,567,471**	**9,792,505,931**	**22,163,186,308**
Farm Origin Group—						
From field crops	6,191	173,906	564,098,524	1,900,623,993	1,465,499,471	3,411,556,948
From animal husbandry	3,671	137,071	416,244,399	1,815,778,004	711,922,027	2,561,171,079
Totals, Farm Origin	**9,862**	**310,977**	**980,342,923**	**3,716,401,997**	**2,177,421,498**	**5,972,728,027**
Canadian origin	8,920	253,618	791,224,654	3,268,361,598	1,740,484,052	5,068,585,162
Foreign origin	942	57,359	189,118,269	448,040,399	436,937,446	904,142,865

Subsection 3.—Manufactures classified by Type of Ownership

Figures showing the classification of the type of ownership under which Canadian manufacturers operate are available from 1946. Although the first survey did not include the fish curing and packing industry, its inclusion in subsequent years has not materially altered the percentage distribution of individual ownership, incorporated companies, etc.

As is to be expected, the smaller establishments, regardless of the type of product manufactured, are carried on under individual ownership. In that category, industries conducted on a small scale contain a large number of establishments, the percentage decreasing as the scale of operations increases, as shown for 1958 in Table **13**.

13.—Percentage Distribution of Manufacturing Establishments, Employees and Shipments, by Type of Ownership and Size of Establishment, 1958

Item and Type of Ownership	Under $25,000	$25,000 to $99,999	$100,000 to $499,999	$500,000 or Over
	p.c.	p.c.	p.c.	p.c.
Establishments—				
Individual ownership	74.8	44.3	11.3	0.7
Partnerships	14.6	16.0	7.6	1.0
Incorporated companies	10.1	37.0	75.7	96.1
Co-operatives	0.5	2.7	5.4	2.2
Totals	100.0	100.0	100.0	100.0
Employees—				
Individual ownership	67.7	38.2	6.9	0.2
Partnerships	18.2	16.2	6.2	0.3
Incorporated companies	13.7	44.2	85.0	98.9
Co-operatives	0.4	1.4	1.9	0.6
Totals	100.0	100.0	100.0	100.0
Factory Shipments—				
Individual ownership	70.9	40.2	8.4	0.2
Partnerships	15.4	15.7	6.4	0.3
Incorporated companies	13.1	41.0	80.2	98.5
Co-operatives	0.6	3.1	5.0	1.0
Totals	100.0	100.0	100.0	100.0

Of the 36,741 establishments operating in 1958, 1,556 establishments in the periodical publishing industry were unclassifiable, leaving 35,185 establishments in the four categories of ownership. Individual ownership numbered 13,786 establishments, partnerships 3,923, incorporated companies 16,566 and co-operatives 910. The percentage distribution of the four categories of ownership is given in Table **14** for 1949-58.

14.—Percentage Distribution of Establishments in Manufacturing Industries classified by Type of Ownership, 1949-58, and by Province and Industrial Group, 1958

Year	Individual Ownership	Partnerships	Incorporated Companies	Co-operatives	Total
	p.c.	p.c.	p.c.	p.c.	p.c.
1949	46.0	15.8	35.3	2.9	100.0
1950	45.6	15.0	36.3	3.1	100.0
1951	44.6	15.5	36.9	3.0	100.0
1952	44.9	15.4	36.9	2.8	100.0
1953	44.4	14.8	38.2	2.6	100.0
1954	43.6	14.3	39.5	2.6	100.0
1955	42.7	13.6	41.1	2.6	100.0
1956	41.4	12.7	43.4	2.5	100.0
1957	40.6	12.0	44.9	2.5	100.0
1958	39.2	11.1	47.1	2.6	100.0

14.—Percentage Distribution of Establishments in Manufacturing Industries classified by Type of Ownership, 1949-58, and by Province and Industrial Group, 1958—concluded

Year, Province and Industrial Group	Individual Ownership	Partnerships	Incorporated Companies	Co-operatives	Total
	p.c.	p.c.	p.c.	p.c.	p.c.
Province, 1958					
Newfoundland	52.3	26.9	20.8	[1]	100.0
Prince Edward Island	47.2	15.3	29.5	8.0	100.0
Nova Scotia	50.2	12.1	35.4	2.3	100.0
New Brunswick	50.4	9.2	38.2	2.2	100.0
Quebec	44.2	9.1	42.7	4.0	100.0
Ontario	33.1	11.5	53.7	1.7	100.0
Manitoba	40.6	10.6	47.4	1.4	100.0
Saskatchewan	52.2	14.0	28.9	4.9	100.0
Alberta	37.3	11.1	47.9	3.7	100.0
British Columbia	32.6	12.3	53.9	1.2	100.0
Yukon and Northwest Territories	18.8	—	81.2	—	100.0
Industrial Group, 1958					
Foods and beverages	43.2	10.0	36.4	10.4	100.0
Tobacco and tobacco products	17.5	2.5	72.5	7.5	100.0
Rubber products	11.2	2.2	86.6	—	100.0
Leather products	26.3	7.8	65.9	—	100.0
Textiles	27.8	10.0	62.1	0.1	100.0
Knitting mills	16.2	8.4	75.1	0.3	100.0
Clothing	25.1	13.4	61.5	—	100.0
Wood products	58.5	14.8	26.5	0.2	100.0
Paper products	7.1	2.2	90.7	—	100.0
Printing, publishing and allied industries[2]	40.2	12.6	46.8	0.4	100.0
Iron and steel products	22.4	9.6	67.7	0.3	100.0
Transportation equipment	25.5	8.2	66.3	—	100.0
Non-ferrous metal products	21.3	10.1	68.6	—	100.0
Electrical apparatus and supplies	6.3	2.4	91.3	—	100.0
Non-metallic mineral products	28.1	10.0	61.8	0.1	100.0
Products of petroleum and coal	2.6	1.7	94.8	0.9	100.0
Chemicals and allied products	13.5	2.7	83.3	0.5	100.0
Miscellaneous manufacturing industries	34.0	10.3	55.7	—	100.0

[1] Included with incorporated companies.
[2] Four main categories of ownership only; the non-classifiable group is not included (see text on p. 654).

The establishments operating under individual ownership are not as important from the point of view of employment provided as their large numbers would indicate. According to Tables 15 and 16, these establishments, which comprise 39.2 p.c. of the number, had only 4.4 p.c. of the total employees. Partnerships accounted for 11.1 p.c. of the number of establishments and 2.3 p.c. of the total employees. Incorporated companies with 47.1 p.c. of the number of establishments had 92.4 p.c. of the employees. Co-operatives with 2.6 p.c. of the number had less than 1 p.c. of the employees.

On the basis of employment provided, incorporated companies are, by a wide margin, the most important factor in the employment field. Such companies had more than 99 p.c. of the employees in the rubber, paper, transportation equipment, electrical apparatus and supplies, and petroleum and coal groups; 98 p.c. of the employees in the tobacco, chemicals and allied products, and non-ferrous metal products groups; 96 p.c. in the textiles and iron and steel groups; 92 p.c. in leather products; and 91 p.c. in miscellaneous manufacturing industries. The lowest proportion was 79 p.c. in the wood products group.

15.—Percentage Distribution of Employment in the Manufacturing Industries classified by Type of Ownership, 1949-58, and by Province and Industrial Group, 1958

Year, Province and Industrial Group	Individual Ownership	Partnerships	Incorporated Companies	Co-operatives	Total
	p.c.	p.c.	p.c.	p.c.	p.c.
1949	6.8	4.2	88.0	1.0	100.0
1950	6.3	3.9	88.8	1.0	100.0
1951	6.1	3.7	89.3	0.9	100.0
1952	5.9	3.6	89.6	0.9	100.0
1953	5.7	3.3	90.2	0.8	100.0
1954	5.4	3.3	90.5	0.8	100.0
1955	5.2	2.9	91.0	0.9	100.0
1956	4.8	2.6	91.8	0.8	100.0
1957	4.5	2.4	92.2	0.9	100.0
1958	4.4	2.3	92.4	0.9	100.0
Province, 1958					
Newfoundland	5.6	4.9	89.5	[1]	100.0
Prince Edward Island	16.7	8.2	66.0	9.1	100.0
Nova Scotia	8.2	2.5	87.6	1.7	100.0
New Brunswick	8.3	2.5	87.8	1.4	100.0
Quebec	5.7	2.6	90.7	1.0	100.0
Ontario	2.9	1.9	94.9	0.3	100.0
Manitoba	4.6	2.3	92.2	0.9	100.0
Saskatchewan	9.8	4.6	73.0	12.6	100.0
Alberta	5.7	2.8	89.1	2.4	100.0
British Columbia	4.4	2.6	91.2	1.8	100.0
Yukon and Northwest Territories	7.6	—	92.4	—	100.0
Industrial Group, 1958					
Foods and beverages	8.1	3.1	83.9	4.9	100.0
Tobacco and tobacco products	0.8	[2]	98.1	1.2	100.0
Rubber products	0.3	[2]	99.7	—	100.0
Leather products	5.6	2.3	92.1	—	100.0
Textiles	2.5	1.4	96.1	—	100.0
Knitting mills	3.1	2.8	94.1	—	100.0
Clothing	7.2	7.0	85.8	—	100.0
Wood products	14.6	6.2	78.8	0.4	100.0
Paper products	0.3	0.2	99.5	—	100.0
Printing, publishing and allied industries[3]	6.9	3.6	88.7	0.8	100.0
Iron and steel products	1.8	1.5	96.7	[1]	100.0
Transportation equipment	0.6	0.2	99.2	—	100.0
Non-ferrous metal products	1.2	0.8	98.0	—	100.0
Electrical apparatus and supplies	0.1	0.3	99.6	—	100.0
Non-metallic mineral products	3.5	2.1	94.4	[1]	100.0
Products of petroleum and coal	0.9	[2]	99.1	[1]	100.0
Chemicals and allied products	0.8	0.2	98.7	0.3	100.0
Miscellaneous manufacturing industries	6.0	3.2	90.8	—	100.0

[1] Included with incorporated companies. [2] Included with individual ownership. [3] Four main categories of ownership only; the non-classifiable group is not included (see text on p. 654).

16.—Principal Statistics of the Manufacturing Industries classified by Size of Establishment and Type of Ownership, 1958

Size of Establishment and Type of Ownership	Establishments	Employees	Salaries and Wages	Cost of Fuel and Electricity	Cost at Plant of Materials Used	Selling Value of Factory Shipments
	No.	No.	$	$	$	$
Under $25,000	**12,521**	**25,518**	**41,866,119**	**3,745,358**	**57,621,651**	**124,255,155**
Individual ownership	8,468	16,536	26,929,747	2,616,996	37,346,238	82,823,622
Partnerships	1,654	4,440	6,594,696	535,250	7,771,779	17,949,187
Incorporated companies	1,152	3,355	7,000,179	571,582	6,729,687	15,391,766
Co-operatives	54	104	119,760	21,530	440,129	645,957
Not classifiable[1]	1,193	1,083	1,221,737	—	5,333,818	7,444,623

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[1] See text on p. 654.

16.—Principal Statistics of the Manufacturing Industries classified by Size of Establishment and Type of Ownership, 1958—concluded

Size of Establishment and Type of Ownership	Establishments	Employees	Salaries and Wages	Cost of Fuel and Electricity	Cost at Plant of Materials Used	Selling Value of Factory Shipments
	No.	No.	$	$	$	$
$25,000 to $99,999	**9,948**	**67,782**	**173,402,680**	**12,386,956**	**253,909,650**	**533,337,633**
Individual ownership	4,292	25,447	60,553,864	4,801,476	106,077,641	209,603,351
Partnerships	1,551	10,789	27,246,228	1,837,187	37,781,799	81,487,492
Incorporated companies	3,583	29,488	80,929,488	5,440,079	89,445,229	213,645,959
Co-operatives	265	917	1,673,537	308,214	13,444,691	16,332,031
Not classifiable[1]	257	1,141	2,999,563	—	7,160,290	12,268,800
$100,000 to $499,999	**8,833**	**184,460**	**552,930,180**	**38,501,822**	**1,051,894,078**	**2,023,062,871**
Individual ownership	990	12,657	32,687,760	3,389,494	112,760,362	168,812,941
Partnerships	664	11,417	32,735,307	2,256,057	70,351,644	127,606,198
Incorporated companies	6,614	155,282	474,748,207	31,464,343	776,394,755	1,606,982,613
Co-operatives	471	3,477	8,082,912	1,391,928	82,667,155	100,305,443
Not classifiable[1]	94	1,627	4,675,994	—	9,720,162	19,355,676
$500,000 or Over	**5,439**	**1,012,842**	**4,040,297,181**	**494,724,396**	**10,458,142,492**	**19,482,530,649**
Individual ownership	36	2,134	5,548,701	331,216	20,593,834	31,353,927
Partnerships	54	3,217	9,433,313	521,274	33,795,637	50,790,603
Incorporated companies	5,217	998,924	3,994,464,487	490,474,818	10,228,014,434	19,147,520,662
Co-operatives	120	6,556	22,650,313	3,397,088	163,673,083	215,818,368
Not classifiable[1]	12	2,011	8,200,367	—	12,065,504	37,047,089
Totals	**36,741**	**1,290,602**	**4,808,496,160**	**549,358,532**	**11,821,567,871**	**22,163,186,308**

[1] See text on p. 654.

Subsection 4.—Leading Manufacturing Industries

The ranks of the ten leading industries in 1959, from the standpoint of selling value of factory shipments, are compared with their respective ranks in significant years since 1929 in the following statement:—

Industry	*Rank in—*						
	1929	*1933*	*1939*	*1944*	*1949*	*1958*	*1959*
Pulp and paper	1	1	2	5	1	1	1
Non-ferrous metal smelting and refining	9	2	1	2	3	3	2
Petroleum products	10	6	6	14	5	2	3
Slaughtering and meat packing	2	3	3	1	2	4	4
Motor vehicles	4	11	5	7	4	5	5
Primary iron and steel	16	31	11	13	8	6	6
Sawmills	5	14	8	11	6	7	7
Butter and cheese	6	5	4	10	7	8	8
Miscellaneous electrical apparatus and supplies	[1]	[1]	[1]	[1]	19	10	9
Sheet metal products	[2]	[2]	[2]	[2]	[2]	13	10

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[1] Not classified separately but included with electrical apparatus and supplies. [2] Did not rank among the forty leading industries.

A prominent feature of Canadian manufacturing development during this period has been the advance of the petroleum products industry to one of the top three places and the advance of primary iron and steel and non-ferrous metal smelting, particularly since the war years. During the past few years there has been little change in the ranking of the major industries. In 1959 compared with 1958, non-ferrous metal smelting and refining moved up to second place and petroleum products dropped from second to third place. Aircraft and parts moved down from ninth place to seventeenth and sheet metal products advanced to take its place as the tenth leading industry.

17.—Principal Statistics of the Forty Leading Manufacturing Industries, ranked according to the Selling Value of Factory Shipments, 1958 and 1959

	Year and Industry	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
		No.	No.	$	$	$	$
	1958						
1	Pulp and paper	128	64,084	307,415,615	597,804,877	702,950,789	1,394,679,180
2	Petroleum products	71	14,490	76,643,818	829,920,509	487,676,382	1,368,649,087[1]
3	Non-ferrous metal smelting and refining	25	26,959	131,081,250	693,796,744	378,451,364	1,135,770,506[1]
4	Slaughtering and meat packing	178	25,712	102,676,636	852,842,056	196,229,499	1,050,461,233
5	Motor vehicles	15	26,396	129,718,693	571,501,488	253,945,274	847,342,113
6	Primary iron and steel	50	30,261	148,023,062	250,669,538	304,923,587	590,317,696
7	Sawmills	5,769	47,763	142,700,044	300,342,531	236,752,567	546,299,359[1]
8	Butter and cheese	1,222	20,879	69,033,691	390,474,716	118,079,130	522,792,666
9	Aircraft and parts	75	39,932	182,276,877	176,538,577	281,131,994	462,331,245[1]
10	Miscellaneous electrical apparatus and supplies	179	25,116	101,160,900	164,052,742	175,827,814	347,837,077
11	Miscellaneous food preparations	299	9,752	34,397,174	223,011,577	121,110,541	345,905,114
12	Bread and other bakery products	2,637	35,618	106,968,772	157,267,880	172,605,555	340,918,015
13	Sheet metal products	473	19,107	78,135,571	175,251,811	154,400,230	333,264,998
14	Printing and publishing	746	30,557	127,741,392	86,411,545	238,784,246	327,687,195
15	Machinery, industrial	379	23,347	95,602,417	133,424,224	167,442,946	311,094,856
16	Furniture	1,820	31,505	97,807,441	149,036,129	156,566,548	308,815,752
17	Rubber goods, including footwear	89	19,943	76,445,003	128,572,616	174,828,149	308,383,196
18	Railway rolling-stock	29	22,374	87,953,769	188,155,709	103,799,162	295,961,250[1]
19	Motor vehicle parts	206	18,132	77,730,771	155,921,088	133,476,810	295,741,107
20	Boxes and bags, paper	223	16,596	57,658,588	168,339,354	108,276,046	277,464,661
21	Fruit and vegetable preparations	396	16,167	43,444,553	174,886,029	97,959,887	276,697,891
22	Clothing, men's factory	546	29,969	74,013,879	144,479,417	116,633,091	264,293,851
23	Acids, alkalies and salts	59	10,073	49,780,443	111,593,209	126,831,706	260,967,832
24	Printing and bookbinding	1,829	26,422	99,473,204	95,823,864	161,100,612	258,323,523
25	Castings, iron	189	15,081	61,177,434	132,575,064	114,962,422	253,444,707
26	Feeds, stock and poultry, prepared	891	6,655	20,538,213	193,728,346	55,314,719	251,753,902
27	Clothing, women's factory	660	25,676	68,469,880	132,488,602	117,611,885	250,457,423
28	Machinery, heavy electrical	80	20,074	97,573,375	97,534,523	139,709,541	244,743,678
29	Telecommunication equipment	127	19,100	75,497,784	119,506,470	122,008,393	237,994,688
30	Sash, door and planing mills	1,555	17,956	54,759,186	141,193,742	92,918,992	236,990,148
31	Breweries	55	8,148	37,708,857	55,655,573	172,383,258	232,353,488
32	Flour mills	71	4,412	15,949,136	173,438,129	43,364,618	218,321,216
33	Miscellaneous chemical products *n.e.s.*	267	12,411	53,169,953	105,608,965	103,550,460	217,508,017
34	Bridge and structural steel	65	14,531	66,027,964	100,702,283	108,320,903	210,882,702[1]
35	Cotton yarn and cloth	48	19,434	53,514,574	124,740,866	79,580,664	210,291,534
36	Tobacco, cigars and cigarettes	25	8,476	32,144,308	108,871,666	88,230,628	196,947,716
37	Concrete products	684	11,819	44,807,114	91,364,354	91,419,385	186,235,051
38	Fish processing	431	13,193	28,367,424	122,632,908	60,533,456	180,783,504
39	Synthetic textiles	48	14,436	49,357,206	81,967,412	87,011,785	177,213,641
40	Brass and copper products	155	9,034	36,441,269	107,392,740	68,161,993	176,400,890
	Totals, Leading Industries, 1958	**22,794**	**851,590**	**3,293,387,240**	**8,809,519,873**	**6,714,867,031**	**15,954,321,708**
	Totals, All Industries, 1958	**36,741**	**1,289,602**	**4,802,496,260**	**11,821,567,471**	**9,792,505,931**	**22,163,186,308**
	1959						
1	Pulp and paper	127	65,028	322,311,304	628,269,346	761,035,456	1,499,585,644
2	Non-ferrous metal smelting and refining	24	27,746	137,227,215	815,787,699	429,888,766	1,307,996,841
3	Petroleum products	69	14,142	81,554,767	863,895,812	244,973,628[2]	1,156,912,043[2]
4	Slaughtering and meat packing	180	26,866	115,970.251	900,504,627	222,648,120	1,135,900,829
5	Motor vehicles	16	28,461	146.956,325	591,068,962	353,765,632	928,949,639
6	Primary iron and steel	49	34,942	182,910.151	354,160,093	393,807,515	782,494,003
7	Sawmills	5,678	48,659	144,759,203	313,399,108	248,582,490	571,822,783[1]
8	Butter and cheese	1,166	20,935	72,038,125	397,397,813	124,435,841	532,636,893

For footnotes, see end of table.

17.—Principal Statistics of the Forty Leading Manufacturing Industries, ranked according to the Selling Value of Factory Shipments, 1958 and 1959—concluded

	Year and Industry	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
		No.	No.	$	$	$	$
	1959—concluded						
9	Miscellaneous electrical apparatus and supplies	181	26,126	110,497,010	186,720,523	203,783,466	385,215,432
10	Sheet metal products	490	20,781	90,121,171	196,717,228	170,386,455	365,558,129
11	Miscellaneous food preparations	299	10,258	38,074,162	220,596,950	127,497,404	353,257,078
12	Bread and other bakery products	2,539	36,404	112,131,527	158,665,789	180,769,353	350,305,213
13	Printing and publishing	740	30,877	135,371,595	91,392,852	253,712,698	347,705,153
14	Rubber goods, including footwear	89	21,093	86,859,037	160,396,526	188,179,495	347,680,280
15	Machinery, industrial	373	24,805	107,314,000	147,849,567	199,929,990	343,494,959
16	Furniture	1,897	32,499	106,404,211	161,032,692	167,220,584	329,845,815
17	Aircraft and parts	78	28,516	142,484,904	127,937,264	195,911,616	327,533,631[1]
18	Motor vehicle parts	211	18,885	85,198,507	173,770,732	151,495,727	323,420,389
19	Boxes and bags, paper	228	17,561	63,296,980	188,877,337	121,017,281	309,442,911
20	Acids, alkalies and salts	57	10,452	53,527,783	127,361,965	142,409,802	297,482,108
21	Fruit and vegetable preparations	378	16,039	44,730,382	168,318,947	110,282,899	286,535,237
22	Printing and bookbinding	1,842	27,097	106,671,271	104,243,189	178,605,478	283,848,120
23	Railway rolling-stock	29	20,248	83,680,309	163,814,494	99,487,140	266,868,100[1]
24	Feeds, stock and poultry, prepared	870	6,656	21,648,372	197,906,359	59,685,786	260,922,002
25	Clothing, women's factory	634	25,842	71,694,239	137,934,277	123,058,229	260,575,604
26	Clothing, men's factory	513	29,239	76,011,271	144,990,401	116,778,300	260,485,879
27	Castings, iron	184	15,711	67,876,410	137,379,005	117,290,636	254,948,289
28	Sash, door and planing mills	1,543	18,161	57,788,412	152,914,213	98,207,684	254,861,818
29	Breweries	56	8,031	40,348,477	57,936,492	183,534,883	244,766,207
30	Machinery, heavy electrical	86	17,357	81,372,760	92,568,152	143,156,069	233,675,890
31	Telecommunication equipment	123	18,931	77,930,395	117,599,255	117,788,500	225,070,764
32	Flour mills	71	4,234	16,819,241	169,769,857	51,547,538	222,897,517
33	Miscellaneous chemical products *n.e.s.*	271	11,592	51,554,787	106,928,274	103,489,578	219,086,473
34	Cotton yarn and cloth	46	18,204	53,313,482	129,837,403	83,808,549	217,912,730
35	Bridge and structural steel	61	14,725	69,341,631	102,852,464	112,796,871	217,650,544[1]
36	Tobacco, cigars and cigarettes	24	8,356	32,988,000	111,616,950	100,985,081	212,360,337
37	Concrete products	682	12,566	50,099,502	99,828,430	102,590,965	207,906,250
38	Synthetic textiles and silk	48	15,004	53,642,334	96,429,339	107,445,845	207,061,266
39	Brass and copper products	156	9,196	39,542,605	124,849,456	75,762,348	200,287,367
40	Miscellaneous paper goods	185	9,466	35,130,468	94,500,068	81,525,328	176,860,714
	Totals, Leading Industries, 1959	**22,293**	**851,691**	**3,467,192,576**	**9,318,019,910**	**7,049,279,026**	**16,711,820,881**
	Totals, All Industries, 1959	**36,193**	**1,303,956**	**5,073,073,706**	**12,552,200,543**	**10,320,962,881**	**23,311,601,481**

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[1] Reported on a production basis. [2] Not exactly comparable with 1958 because of a change in the method of valuation; if 1958 method had been used, 1959 shipments would have totalled approximately $1,425,051,000.

Section 3.—Principal Factors in Manufacturing Production

In addition to the factors dealt with in the following Subsections 1 and 2, one of the principal indicators of growth in manufacturing production is the amount paid as salaries and wages to various groups of employees within these industries. Detailed information on employment, earnings and hours is given in the Labour Chapter of this volume, Section 3.

Subsection 1.—Capital and Repair Expenditures

The present series of statistics covering expenditure on fixed capital and repairs by manufacturing industries commences with the year 1944.

Capital expenditures by manufacturers in 1958 totalled $397,600,000 for construction and $697,400,000 for machinery and equipment; in addition, $571,900,000 was spent for repairs. Of the total capital expenditures amounting to $1,095,000,000, 13.1 p.c. was reported by petroleum and coal products, 11.6 p.c. by paper products, 11.5 p.c. by iron and steel products, 11.5 p.c. by foods and beverages and 10.6 p.c. by chemicals and allied products.

On the whole, there was a considerable drop in capital expenditure in 1958 from the high level of 1957. Even so, the 1958 figure was the third highest on record. The average annual expenditure on capital assets amounted to $1,058,800,000 for the period 1951-58, reflecting the expansion and modernization of the manufacturing industries of Canada during that period.

Of the groups reporting capital expenditures of $50,000,000 or more in 1958, only two reported increases over 1957—foods and beverages, and petroleum and coal products. The other five groups in this category reported decreases ranging from 109.4 p.c. for paper products to 14.9 p.c. for transportation equipment.

18.—Capital and Repair Expenditures by the Manufacturing Industries, 1949-58, and by Province and Industrial Group, 1958

Year, Province and Industrial Group	Capital Expenditure			Repair Expenditure		
	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000
1949	156.6	379.2	535.8	66.7	267.2	333.9
1950	135.4	367.1	502.5	67.6	279.0	346.6
1951	267.6	525.0	792.6	85.0	337.0	422.0
1952	343.6	629.0	972.6	95.2	363.5	458.7
1953	324.5	644.5	969.0	94.6	385.5	480.1
1954	287.6	534.5	822.1	97.6	390.9	488.5
1955	344.5	601.8	946.3	100.6	413.0	513.6
1956	487.7	906.1	1,393.8	112.2	465.6	577.8
1957	519.9	959.0	1,478.9	115.4	498.5	613.9
1958	397.6	697.4	1,095.0	109.8	462.1	571.9
Province, 1958						
Newfoundland	1.1	4.7	5.8	1.0	5.1	6.1
Prince Edward Island	0.1	0.2	0.3	0.1	0.3	0.4
Nova Scotia	4.2	8.3	12.5	5.5	8.5	14.0
New Brunswick	11.6	13.7	25.3	1.4	9.4	10.8
Quebec	83.4	217.2	300.6	29.6	131.3	160.9
Ontario	159.0	344.2	503.2	49.3	234.0	283.3
Manitoba	28.1	20.9	49.0	3.8	8.8	12.6
Saskatchewan	18.2	5.3	23.5	2.0	2.5	4.5
Alberta	48.3	21.6	69.9	6.7	13.9	20.6
British Columbia	43.6	61.3	104.9	10.4	48.3	58.7
Industrial Group, 1958						
Foods and beverages	40.5	85.7	126.2	13.9	51.4	65.3
Tobacco and tobacco products	4.1	7.5	11.6	1.1	2.8	3.9
Rubber products	2.0	6.4	8.4	1.0	7.5	8.5
Leather products	0.5	1.9	2.4	0.6	2.3	2.9
Textiles (except clothing)	2.6	20.7	23.3	2.8	16.0	18.8
Clothing (textile and fur)[1]	0.7	7.5	8.2	1.1	3.9	5.0
Wood products	8.8	22.1	30.9	5.9	24.7	30.6
Paper products	25.5	101.7	127.2	7.2	85.7	92.9
Printing, publishing and allied industries	13.4	20.1	33.5	2.0	6.3	8.3
Iron and steel products	35.7	90.7	126.4	14.4	83.3	97.7
Transportation equipment	16.6	37.7	54.3	10.4	30.7	41.1
Non-ferrous metal products	43.7	52.2	95.9	9.6	49.3	58.9
Electrical apparatus and supplies	7.3	21.8	29.1	2.9	14.0	16.9
Non-metallic mineral products	14.4	25.9	40.3	2.9	32.2	35.1
Products of petroleum and coal	136.0	7.3	143.3	23.4	6.2	29.6
Chemicals and allied products	43.1	73.5	116.6	9.2	41.9	51.1
Miscellaneous industries	2.7	9.3	12.0	1.4	3.9	5.3
Capital items charged to operating expenses	—	105.4	105.4	—	—	—

[1] Includes knitting mills.

Subsection 2.—Size of Manufacturing Establishments

The size of a manufacturing establishment is generally measured either by the value of factory shipments or by the number of employees but each of these methods has its limitations. The former measure has to be adjusted for changes in the price level and, as between industries, it makes those in which the cost of raw materials is relatively high appear to operate on a larger scale. The latter takes no account of the differences in capital equipment at different times or in various industries and obviously the increased use of machinery may lead to an increase in production concurrently with a decrease in number of employees.

Size as Measured by Selling Value of Factory Shipments.—In 1946, after heavy wartime production had ceased and reconversion had barely begun, there were 1,442 manufacturing establishments, each with an output of $1,000,000 or over. Their combined production was valued at $5,377,870,217 and accounted for 66.9 p.c. of the total for all manufacturing plants. By 1949, the number of factories in that category had increased to 1,926 and the proportion of their production to the total was 74.4 p.c. As a result of the tremendous industrial expansion and the increase in prices of the 1950's, the number of plants with shipments valued at over $1,000,000 increased to 3,212 in 1958. These plants contributed 80.8 p.c. of the total output in that year.

19.—Manufacturing Establishments and Total and Average Production classified by Value of Product Group, 1946, 1949, 1955 and 1958

Value Group	Establishments	Total Production[1]	Average per Establishment	Establishments	Total Production[1]	Average per Establishment
	1946			1949		
	No.	$	$	No.	$	$
Under $25,000	14,478	138,504,608	9,566	16,176	145,907,685	9,020
$ 25,000 but under $ 50,000	4,524	162,355,572	35,888	4,884	174,899,010	35,810
50,000 " 100,000	3,958	282,976,378	71,495	4,487	320,878,071	71,513
100,000 " 200,000	3,060	433,302,078	141,602	3,630	514,921,581	141,852
200,000 " 500,000	2,620	824,481,340	314,687	3,195	1,000,486,294	313,141
500,000 " 1,000,000	1,167	816,202,278	699,402	1,494	1,041,235,578	696,945
1,000,000 " 5,000,000	1,183	2,376,006,853	2,008,459	1,505	3,164,936,378	2,102,948
5,000,000 or over	259	3,001,863,364	11,590,206	421	6,116,328,703	14,528,097
Totals and Averages	**31,249**	**8,035,692,471**	**257,150**	**35,792**	**12,479,593,300**	**348,670**
	1955[2]			1958		
	No.	$	$	No.	$	$
Under $25,000	15,327	143,480,957	9,362	12,520	124,233,513	9,923
$ 25,000 but under $ 50,000	5,112	184,847,245	36,159	5,093	183,855,109	36,100
50,000 " 100,000	4,781	343,512,650	50,933	4,855	349,482,524	71,984
100,000 " 200,000	4,250	608,414,152	143,156	4,429	630,075,157	142,261
200,000 " 500,000	3,970	1,261,916,569	317,863	4,405	1,393,009,356	316,234
500,000 " 1,000,000	2,013	1,411,584,589	701,234	2,227	1,570,426,524	705,176
1,000,000 " 5,000,000	2,101	4,364,363,277	2,077,279	2,484	5,232,047,910	2,106,299
5,000,000 or over	628	11,195,814,372	17,827,730	728	12,680,056,215	17,417,660
Totals and Averages	**38,182**	**19,513,933,811**	**511,077**	**36,741**	**22,163,186,308**	**602,955**

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[1] In 1952 gross value of products was replaced by selling value of factory shipments.

[2] Newfoundland included from 1955.

Size as Measured by Number of Employees.—In 1946 the 311 establishments employing 500 or more persons accounted for 32.3 p.c. of the total number of employees engaged in manufacturing. In 1958 there were 367 plants with more than 500 employees, 55 of them with over 1,500. The 367 plants employed 33.3 p.c. of the total workers in all manufacturing establishments.

20.—Establishments and Employees in Manufactures classified by Number of Employees per Establishment, 1946, 1949, 1955 and 1958

Employee Group	Establishments	Employees	Average per Establishment	Establishments	Employees	Average per Establishment
	1946			1949		
	No.	No.	No.	No.	No.	No.
Under 5 employees	13,810	32,664	2.4	16,647	34,865	2.1
5 to 14 "	8,190	67,530	8.2	9,133	75,482	8.3
15 " 49 "	5,488	146,939	26.7	5,967	159,012	26.7
50 " 99 "	1,759	122,919	69.8	1,905	132,069	69.3
100 " 199 "	1,032	144,240	139.7	1,114	156,084	140.1
200 " 499 "	659	202,114	306.7	694	213,130	307.1
500 " 999 "	311	341,750	1,098.9	332	391,455	1,179.1
1,000 or over						
Head offices[1]	—	—	—	—	9,110	—
Totals and Averages	**31,249**	**1,058,156**	**33.9**	**35,792**	**1,171,207**	**32.7**
	1955[2]			1958		
	No.	No.	No.	No.	No.	No.
Under 5 employees	16,762	36,340	2.2	15,156	33,747	2.2
5 to 14 "	9,864	81,471	8.3	9,820	81,410	8.3
15 " 49 "	6,340	169,575	26.7	6,452	172,849	26.8
50 " 99 "	2,082	144,411	69.4	2,149	149,195	69.4
100 " 199 "	1,175	163,091	138.8	1,212	168,145	138.7
200 " 499 "	739	227,667	308.1	775	238,246	307.4
500 " 999 "	243	167,720	690.2	248	171,711	692.4
1,000 " 1,499 "	76	91,840	1,208.4	64	80,193	1,253.0
1,500 or over	61	200,413	3,285.5	55	177,392	3,225.3
Head offices[1]	—	15,933	—	—	17,714	—
Not classifiable	840	—	—	810	—	—
Totals and Averages	**38,182**	**1,298,461**	**3.40**	**36,741**	**1,290,602**	**35.1**

[1] Includes only those head offices not located at a plant.

[2] Newfoundland included from 1955.

21.—Manufacturing Establishments classified by Number of Employees and by Province, 1958

Province or Territory	Employees— Up to 499	500 to 799	800 to 999	1,000 to 1,499	1,500 or Over	Total
	No.	No.	No.	No.	No.	No.
Newfoundland	766	—	—	1	1	768
Prince Edward Island	179	—	—	—	—	179
Nova Scotia	1,290	3	2	—	2	1,297
New Brunswick	932	4	1	2	—	939
Quebec	11,696	64	25	25	18	11,828
Ontario	13,101	95	23	28	29	13,276
Manitoba	1,624	5	1	3	1	1,634
Saskatchewan	970	—	—	—	—	970
Alberta	1,750	10	1	1	—	1,762
British Columbia	4,050	6	8	4	4	4,072
Yukon and Northwest Territories	16	—	—	—	—	16
Canada	**36,374**	**187**	**61**	**64**	**55**	**36,741**

Size of Establishments in Leading Industries.—Table **22** shows the degree of concentration in some of the leading industries of Canada. Concentration is extremely marked in the motor vehicle, non-ferrous metal smelting and refining, railway rolling-stock, aircraft and parts, pulp and paper, iron and steel, rubber goods, and heavy electrical machinery industries. On the other hand, the degree of concentration is low in such industries as factory clothing, furniture, butter and cheese, miscellaneous food preparations, fruit and vegetable preparations, sawmills and printing and bookbinding.

22.—Percentage Importance of Establishments, each Employing 200 or more Persons, in the 25 Leading Industries, 1958

	Industry	Number of Establishments Employing 200 or more Persons	Percentage of Total Establishments in the Industry	Percentage of Total Shipments in the Industry
1	Pulp and paper	82	64.1	94.7
2	Petroleum products	19	26.8	85.8
3	Non-ferrous metal smelting and refining	21	84.0	97.5
4	Slaughtering and meat packing	34	19.1	76.5
5	Motor vehicles	8	53.3	98.9
6	Primary iron and steel	16	32.0	92.2
7	Sawmills	20	0.3	27.5
8	Butter and cheese	20	1.6	21.7
9	Aircraft and parts	20	26.7	94.8
10	Miscellaneous electrical apparatus and supplies	25	14.0	74.2
11	Miscellaneous food preparations	5	1.7	21.1
12	Bread and other bakery products	27	1.0	32.7
13	Sheet metal products	19	4.0	46.3
14	Printing and publishing	29	3.9	67.5
15	Machinery, industrial	27	7.1	49.6
16	Furniture	17	0.9	15.4
17	Rubber goods, including footwear	24	27.0	88.9
18	Railway rolling-stock	20	69.0	96.5
19	Motor vehicle parts	20	9.7	68.2
20	Boxes and bags, paper	19	8.5	40.0
21	Fruit and vegetable preparations	9	2.3	36.0
22	Clothing, men's factory	33	6.0	36.2
23	Acids, alkalies and salts	14	23.7	64.2
24	Printing and bookbinding	14	0.8	24.9
25	Castings, iron	20	10.6	68.8

PART III.—PROVINCIAL AND LOCAL DISTRIBUTION OF MANUFACTURING PRODUCTION

Section 1.—Provincial Distribution of Manufacturing Production

This Section shows the distribution and concentration of the manufacturing industries in each province followed by a general analysis of the leading industries in the individual provinces. Ontario and Quebec are by far the most important manufacturing provinces of Canada. Their combined production in 1958 amounted to $17,618,826,619 or 80 p.c. of the total factory shipments of manufactured products. The water power and other important resources of the two provinces, their large population concentrations and consumer demands and their nearness to the larger markets of the United States have contributed to this progress.

Table **1** shows the outstanding predominance of Ontario and Quebec in each industrial group. Quebec leads in the manufacture of tobacco and tobacco products, textiles, knitting mills and clothing, and products of petroleum and coal. In each of the other groups

Ontario has the greater production of the two provinces. In the production of wood products British Columbia, with 41 p.c. of the total, holds the dominant position, outranking both Ontario and Quebec which account for 25 and 22 p.c., respectively, of the total. In each of the other groups Ontario and Quebec lead by a wide margin.

1.—Summary Statistics of Manufactures of each Province classified by Industrial Group, 1958

Province and Industrial Group	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	$	$	$	$
Newfoundland						
Foods and beverages	73	3,476	7,110,270	15,994,947	16,237,970	33,600,526
Leather products	4	64	138,332	209,765	163,764	388,926
Textiles	[1]	[1]	[1]	[1]	[1]	[1]
Knitting mills	[1]	[1]	[1]	[1]	[1]	[1]
Clothing	3	158	256,083	199,374	300,810	571,717
Wood products	600	1,277	1,497,272	3,356,305	2,849,791	6,332,808
Paper products[2]	2	2,971	15,098,491	26,736,005	29,702,009	61,003,231
Printing, publishing and allied industries	42	423	1,314,562	656,292	2,414,035	3,137,802
Iron and steel products	11	294	933,088	1,003,421	1,426,502	2,511,057
Transportation equipment	6	311	1,077,959	552,691	991,495	1,579,578
Electrical apparatus and supplies	[1]	[1]	[1]	[1]	[1]	[1]
Non-metallic mineral products	12	289	942,134	1,403,718	1,977,055	3,707,864
Products of petroleum and coal	[1]	[1]	[1]	[1]	[1]	[1]
Chemicals and allied products	6	82	271,179	912,880	1,054,972	1,996,866
Miscellaneous industries	9	259	594,199	1,130,893	926,111	2,148,825
Totals, Newfoundland	**768**	**9,604**	**29,233,569**	**52,156,291**	**58,044,514**	**116,979,200**
Prince Edward Island						
Foods and beverages	89	1,045	2,145,125	15,795,281	4,447,577	20,648,734
Tobacco and tobacco products	[3]	[3]	[3]	[3]	[3]	[3]
Textiles	4	77	146,639	976,159	632,820	1,610,311
Wood products	60	205	316,477	580,743	545,486	1,148,768
Paper products	[3]	[3]	[3]	[3]	[3]	[3]
Printing, publishing and allied industries	11	182	446,302	227,456	723,486	973,191
Iron and steel products	4	30	76,890	107,129	97,118	214,805
Transportation equipment	[3]	[3]	[3]	[3]	[3]	[3]
Non-metallic mineral products	4	16	45,767	35,893	92,276	129,173
Chemicals and allied products	[3]	[3]	[3]	[3]	[3]	[3]
All other groups	7	77	212,785	1,480,796	727,734	2,162,746
Totals, Prince Edward Island	**179**	**1,632**	**3,389,985**	**19,203,457**	**7,266,497**	**26,887,728**
Nova Scotia						
Foods and beverages	362	8,573	19,288,342	66,967,428	39,535,298	109,949,917
Leather products	[1]	[1]	[1]	[1]	[1]	[1]
Textiles	11	457	1,152,345	2,126,263	2,723,486	4,942,976
Knitting mills	5	874	1,701,456	3,292,731	3,196,306	6,761,380
Clothing	8	343	560,328	1,164,791	764,795	2,030,194
Wood products	585	3,422	6,250,523	14,488,812	12,731,522	27,712,542
Paper products	6	1,515	5,569,596	10,619,804	13,429,175	25,619,501
Printing, publishing and allied industries	132	1,412	4,333,061	3,033,318	8,148,053	11,315,063
Iron and steel products	57	5,927	23,786,432	36,947,311	35,161,157	77,669,814
Transportation equipment	64	4,488	15,502,226	17,166,765	21,954,700	39,682,536
Electrical apparatus and supplies	[1]	[1]	[1]	[1]	[1]	[1]
Non-metallic mineral products	32	565	1,603,168	1,402,718	4,275,431	6,315,465
Products of petroleum and coal	[1]	[1]	[1]	[1]	[1]	[1]
Chemicals and allied products	15	295	941,127	2,962,910	2,406,441	5,739,038
Miscellaneous industries	20	1,139	5,316,949	57,090,752	32,671,585	94,190,821
Totals, Nova Scotia	**1,297**	**29,010**	**86,005,553**	**217,263,603**	**176,997,949**	**411,929,247**

For footnotes, see end of table, p. 667.

1.—Summary Statistics of Manufactures of each Province classified by Industrial Group, 1958—continued

Province and Industrial Group	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	$	$	$	$
New Brunswick						
Foods and beverages	318	6,700	15,396,018	81,471,990	38,998,638	121,481,659
Leather products	7	368	745,808	1,083,670	1,420,143	2,482,331
Textiles	14	412	936,933	1,421,377	1,271,904	2,544,725
Knitting mills	[1]	[1]	[1]	[1]	[1]	[1]
Clothing	5	168	229,314	199,774	321,304	523,680
Wood products	409	3,260	6,750,612	17,220,687	11,356,376	29,020,171
Paper products	17	4,292	18,736,883	44,477,413	47,456,949	99,172,844
Printing, publishing and allied industries	68	927	2,880,537	1,808,053	4,789,590	6,722,533
Iron and steel products	35	1,288	3,993,391	6,783,766	7,218,777	14,029,276
Transportation equipment	9	1,860	6,801,010	9,108,140	7,978,842	17,407,996
Non-ferrous metal products	[1]	[1]	[1]	[1]	[1]	[1]
Electrical apparatus and supplies	[1]	[1]	[1]	[1]	[1]	[1]
Non-metallic mineral products	32	558	1,789,004	1,775,631	4,388,050	7,258,643
Products of petroleum and coal	[1]	[1]	[1]	[1]	[1]	[1]
Chemicals and allied products	7	143	495,682	3,062,220	1,267,260	4,885,739
Miscellaneous industries	18	768	2,321,979	2,148,254	4,200,188	6,492,220
Totals, New Brunswick	**939**	**20,744**	**61,077,171**	**170,560,975**	**130,668,021**	**312,021,817**
Quebec						
Foods and beverages	2,678	48,755	152,297,030	789,209,203	410,612,685	1,215,134,617
Tobacco and tobacco products	21	7,618	28,420,426	98,217,958	77,327,139	175,701,092
Rubber products	33	5,715	18,779,505	23,258,874	29,319,497	54,519,792
Leather products	324	15,730	38,017,732	55,405,556	56,927,019	113,278,403
Textiles	401	35,879	105,488,246	221,093,205	168,939,895	401,414,688
Knitting mills	178	10,794	25,110,251	45,647,956	42,120,592	88,479,444
Clothing	1,536	55,513	133,692,915	254,134,957	221,103,302	476,752,105
Wood products	2,791	30,922	80,065,286	160,799,378	134,322,662	298,805,342
Paper products	192	36,262	157,165,480	321,148,110	342,678,692	705,508,207
Printing, publishing and allied industries	1,222	19,819	76,807,636	71,425,894	138,702,737	211,052,560
Iron and steel products	780	40,822	159,392,198	251,521,956	277,153,325	546,687,838
Transportation equipment	114	32,149	135,946,506	185,879,654	197,580,848	387,416,167
Non-ferrous metal products	186	18,440	83,267,683	419,010,341	184,514,705	639,850,425
Electrical apparatus and supplies	98	22,514	94,279,042	123,757,817	138,820,117	268,575,740
Non-metallic mineral products	383	12,261	46,382,704	65,263,993	100,142,703	181,664,565
Products of petroleum and coal	19	3,581	18,248,651	288,376,128	178,238,838	483,720,411
Chemicals and allied products	373	21,346	89,235,755	170,467,150	211,401,583	390,656,361
Miscellaneous industries	499	11,238	34,008,862	53,166,715	60,868,416	115,580,521
Totals, Quebec	**11,828**	**429,358**	**1,476,605,908**	**3,597,784,845**	**2,970,774,755**	**6,754,798,278**
Ontario						
Foods and beverages	3,129	78,230	273,197,149	1,159,931,029	674,074,262	1,854,772,277
Tobacco and tobacco products	17	2,690	8,693,107	107,811,261	21,549,596	129,380,016
Rubber products	46	14,167	57,433,010	105,101,144	145,191,493	253,309,301
Leather products	212	12,832	36,931,423	63,069,124	56,446,306	121,339,579
Textiles	378	24,798	79,892,750	152,093,449	138,306,507	300,319,924
Knitting mills	123	8,710	21,840,080	37,991,031	36,631,645	74,282,536
Clothing	671	23,096	62,508,895	95,239,092	99,829,962	196,457,761
Wood products	2,157	32,494	100,077,837	170,367,358	160,922,317	335,916,938
Paper products	258	35,947	155,528,897	355,990,957	329,249,095	715,800,590
Printing, publishing and allied industries	1,829	36,209	151,484,403	133,584,911	265,035,883	401,075,663
Iron and steel products	1,644	112,979	494,459,039	842,998,138	916,810,635	1,802,728,575
Transportation equipment	265	72,703	336,059,974	891,788,472	580,882,660	1,504,740,337
Non-ferrous metal products	320	24,653	104,131,563	393,553,179	274,732,884	683,423,641
Electrical apparatus and supplies	320	49,991	212,223,335	330,873,705	365,895,233	708,050,236
Non-metallic mineral products	529	20,569	85,270,288	108,789,010	195,575,266	327,348,231
Products of petroleum and coal	32	7,154	37,487,663	299,907,424	137,162,049	457,314,090
Chemicals and allied products	555	27,327	119,559,986	350,199,306	374,548,476	750,576,807
Miscellaneous industries	791	21,813	75,875,253	105,030,907	141,229,396	247,191,830
Totals, Ontario	**13,276**	**606,362**	**2,412,654,652**	**5,704,319,497**	**4,914,073,665**	**10,864,028,332**

For footnote, see end of table, p. 667.

1.—Summary Statistics of Manufactures of each Province classified by Industrial Group, 1958—continued

Province and Industrial Group	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	$	$	$	$
Manitoba						
Foods and beverages	382	10,085	35,167,489	192,872,062	78,756,945	275,042,225
Rubber products	3	8	12,893	35,090	14,531	53,453
Leather products	20	637	1,512,847	2,709,308	2,208,634	5,101,695
Textiles	30	503	1,331,583	6,061,881	2,617,373	8,671,406
Knitting mills	4	108	204,976	509,385	293,564	897,547
Clothing	145	5,724	13,629,369	25,853,924	21,114,649	47,211,821
Wood products	380	3,183	8,806,391	16,981,532	14,141,471	31,515,876
Paper products	22	1,602	5,705,933	16,825,936	18,942,119	37,091,141
Printing, publishing and allied industries	289	3,804	13,525,755	11,118,528	24,108.681	35,500,058
Iron and steel products	146	5,316	20,917.408	33,464,785	34,538,641	68,371,099
Transportation equipment	30	6,334	22,987,061	22,553,494	29,008 138	52,467,718
Non-ferrous metal products	15	500	2,387,167	5,858,260	4,213,342	10,724,361
Electrical apparatus and supplies	20	1,005	3,886,203	6,198,446	7,308,133	13,900,617
Non-metallic mineral products	46	1,368	5,074,269	8,302,194	13,097,164	23,156,318
Products of petroleum and coal	6	726	3,035,237	34,520,797	20,983,206	57,632,093
Chemicals and allied products	37	728	2,439,200	9,218,012	8,498,911	17,746,830
Miscellaneous industries	59	751	2,235,704	4,369,538	4,522,040	8,967,065
Totals, Manitoba	**1,634**	**42,382**	**142,859,485**	**397,453,172**	**284,367,542**	**694,051,323**
Saskatchewan						
Foods and beverages	242	5,460	19,357,452	105,191,482	47,884,410	155,118,581
Textiles	7	71	170,866	820,907	317,180	1,138,402
Clothing	8	262	638,482	1,084,142	1,196,280	2,423,879
Wood products	391	1,340	2,768,484	5,834,114	4,996,143	11,056,447
Paper products	6	81	301,352	432,901	413,056	852,205
Printing, publishing and allied industries	180	1,548	5,142,745	3,370,073	8,837,820	12,351,592
Iron and steel products	53	793	2,803,201	9,732,482	6,925,676	16,766,059
Transportation equipment	3	11	38,182	19,913	63,782	86,452
Non-ferrous metal products	[1]	[1]	[1]	[1]	[1]	[1]
Electrical apparatus and supplies	[1]	[1]	[1]	[1]	[1]	[1]
Non-metallic mineral products	33	610	2,193,217	2,737,172	8,070,843	11,755,323
Products of petroleum and coal	13	1,218	6,019,155	50,631,451	29,505,893	83,164,169
Chemicals and allied products	10	215	955,798	3,001,688	1,308,105	4,359,950
Miscellaneous industries	24	674	2,839,458	15,977,649	13,874,980	32,225,382
Totals, Saskatchewan	**970**	**12,283**	**43,228,392**	**198,833,974**	**123,394,168**	**331,298,441**
Alberta						
Foods and beverages	453	11,856	41,248,593	248,587,415	95,618,101	344,493.764
Rubber products	[1]	[1]	[1]	[1]	[1]	[1]
Leather products	11	68	180,362	340,710	255,256	610,116
Textiles	15	421	1,686,049	4,701,577	3,889,555	8,728,610
Knitting mills	5	41	93,063	107,879	115,165	237,640
Clothing	24	1,034	2,587,446	5,779,046	4,762,962	10,780,849
Wood products	554	4,866	12,988,941	29,644,217	24,406,380	54,895,286
Paper products	17	1,195	5,511,170	16,064,590	12,272,714	28,966.850
Printing, publishing and allied industries	257	2,677	9,615,941	8,150.305	18,893,067	27,231,808
Iron and steel products	173	4,272	16,865.222	33,987.205	28,918,988	63,942,533
Transportation equipment	27	3,226	12,283,157	11,880,042	14,015,887	26,157,640
Non-ferrous metal products	13	764	3,670,370	12,345,570	9,610,182	22,448,265
Electrical apparatus and supplies	9	172	643,516	2,514,693	1,772,868	4,584,959
Non-metallic mineral products	77	2,684	10,459,576	18,454,809	28,020,986	48,439,415
Products of petroleum and coal	27	2,251	11,676,035	82,540,811	64,610.488	151,438,143
Chemicals and allied products	37	1,836	8,737,681	17,955,587	28,410,559	49,114,078
Miscellaneous industries	63	497	1,888,057	2,257,391	3,866,297	6,182,038
Totals, Alberta	**1,762**	**37,860**	**140,135,179**	**495,311,847**	**339,439,455**	**848,251,994**

For footnote, see end of table, p. 667.

1.—Summary Statistics of Manufactures of each Province classified by Industrial Group, 1958—concluded

Province or Territory and Industrial Group	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	$	$	$	$
British Columbia						
Foods and beverages	687	16,253	58,029,194	263,220,830	130,084,940	398,434,154
Rubber products	5	48	201,760	155,055	269,574	444,333
Leather products	18	384	1,012,803	1,646,272	1,465,879	3,221,723
Textiles	40	775	2,287,328	4,935,529	3,455,781	8,508,043
Knitting mills	4	301	699,763	847,736	1,432,420	2,500,063
Clothing	60	1,442	3,870,053	5,588,596	5,662,908	11,557,453
Wood products	1,913	39,905	149,921,370	297,972,340	239,174,452	546,734,632
Paper products	41	9,066	45,951,713	90,832,422	116,517,516	215,385,596
Printing, publishing and allied industries	401	5,207	22,351,044	14,842,796	37,293,726	52,595,330
Iron and steel products	351	7,719	33,946,365	54,164,027	55,842,660	112,761,743
Transportation equipment	106	4,874	22,669,563	14,571,603	30,944,755	46,230,229
Non-ferrous metal products	56	6,056	29,724,163	85,365,674	46,640,532	143,031,634
Electrical apparatus and supplies	39	919	4,104,720	8,387,916	8,026,807	16,135,868
Non-metallic mineral products	100	1,938	8,051,500	10,518,706	14,232,895	26,921,333
Products of petroleum and coal	13	1,647	8,508,036	79,592,372	52,933,579	137,575,719
Chemicals and allied products	100	2,550	11,024,534	29,604,343	35,345,577	65,754,194
Miscellaneous industries	138	1,138	4,274,300	3,693,409	7,296,210	11,168,412
Totals, British Columbia	**4,072**	**100,222**	**406,628,209**	**965,939,626**	**786,620,211**	**1,798,960,459**
Yukon and N.W.T.						
Foods and beverages	4	12	52,934	70,836	128,292	212,835
Wood products	8	48	138,356	217,050	230,912	454,769
All other groups[4]	4	85	486,867	2,452,298	499,950	3,311,885
Totals, Yukon and N.W.T.	**16**	**145**	**678,157**	**2,740,184**	**859,154**	**3,979,489**

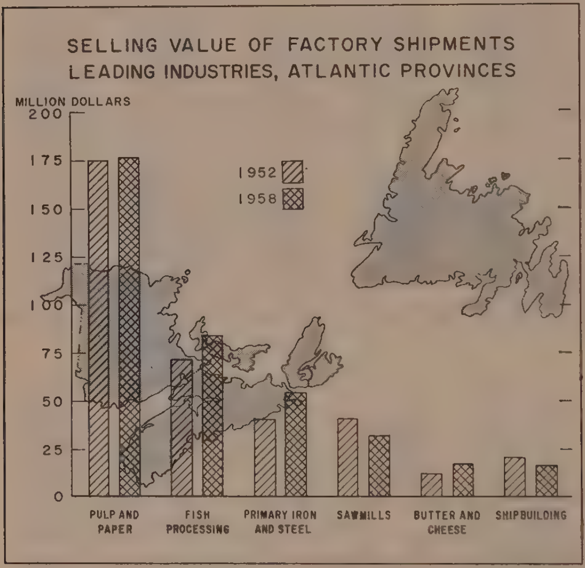
[1] Confidential; included in "Miscellaneous industries". [2] Publication of these figures was authorized by the firms concerned. [3] Confidential; included under "All other groups". [4] Includes printing, publishing and allied industries; products of petroleum and coal; and chemicals and allied products.

2.—Concentration of Manufacturing Production in each Province, 1957 and 1958

Province or Territory	1957			1958		
	Number of Establishments Employing 500 or more Persons	Percentage of Total Number of Establishments in Province	Provincial Percentage of Number of Employees Accounted for by these Establishments	Number of Establishments Employing 500 or more Persons	Percentage of Total Number of Establishments in Province	Provincial Percentage of Number of Employees Accounted for by these Establishments
Newfoundland	2	0.2	32.6	2	0.3	30.9
Prince Edward Island	—	—	—	—	—	—
Nova Scotia	7	0.5	32.2	7	0.5	30.7
New Brunswick	7	0.7	28.9	7	0.7	27.8
Quebec	145	1.2	38.2	132	1.1	35.0
Ontario	202	1.5	40.0	175	1.3	36.0
Manitoba	10	0.6	23.7	10	0.6	23.4
Saskatchewan	—	—	—	—	—	—
Alberta	12	0.6	21.5	12	0.7	21.0
British Columbia	28	0.7	28.3	22	0.5	24.4
Yukon and Northwest Territories	—	—	—	—	—	—
Canada	**413**	**1.1**	**36.7**	**367**	**1.0**	**33.3**

Subsection 1.—The Manufactures of the Atlantic Provinces

The Atlantic Provinces are of economic importance in a number of fields, such as pulp and paper, fish processing, sawmills and primary iron and steel. In *Newfoundland* manufacturing production is dominated by the forest and fisheries resources. Pulp and paper is by far the most important industry, having shipments valued at $61,003,231 in 1958, followed by fish processing with shipments of $15,661,753. These two industries accounted for 66 p.c. of the total production of the province. In *Prince Edward Island* agriculture and fishing resources make butter and cheese, slaughtering and meat packing, and fish processing the leading industries. *Nova Scotia* is renowned for its coal mines, its fisheries and its extensive forests and agricultural lands; it is also favoured with easy access by sea to the high-grade iron ore supply of Newfoundland. On these resources are based the leading manufactures of primary iron and steel, fish processing, pulp and paper, shipbuilding and sawmills. In addition, an important petroleum refinery and industries producing railway rolling-stock, coke and gas, miscellaneous iron and steel products, and aircraft add to the diversification of industry in the province. The forests of *New Brunswick* give a leading place to pulp and paper and sawmilling industries in the province. Other important manufacturing and processing activities are based on fish and agricultural resources, and there are also a number of metal working industries producing heating and cooking apparatus, brass and copper products, etc.


SELLING VALUE OF FACTORY SHIPMENTS LEADING INDUSTRIES, ATLANTIC PROVINCES

Considering the Atlantic Provinces as an economic unit, pulp and paper was the leading industry in 1958 with factory shipments valued at $177,110,505. Fish processing and packing with factory shipments valued at $84,801,250 was in second place. Other leading industries, in order of importance and with shipments exceeding $30,000,000, were: petroleum products, primary iron and steel, sawmills and sugar refining. These six industries accounted for 55 p.c. of the total value of factory shipments in the Atlantic region.

The value of factory shipments in 1958 registered a drop of 1.6 p.c. compared with 1957, and the number of persons employed in manufacturing was 5.7 p.c. lower. However, all but three of the consumer goods industries having shipments of over $10,000,000 during the year reported increases, ranging from 12.8 p.c. for prepared stock and poultry feeds to 2 p.c. for petroleum products. The three consumer goods industries reporting decreased shipments were pulp and paper, sugar refining and coke and gas. On the other hand, industries manufacturing producer or durable goods to the value of more than $10,000,000 in 1958 reported substantial declines in value of shipments. Railway rolling-stock was down 22.5 p.c., shipbuilding and repairs 19.5 p.c., sawmills 15.6 p.c., and primary iron and steel 0.6 p.c. The miscellaneous iron and steel products group, which was in this category in 1957, reported a severe decline bringing its shipments down below the $10,000,000 mark.

Postwar industrial development in the Atlantic Provinces has been more selective than in some of the other provinces. Fish processing, new sawmills, increased pulp-making capacity and the manufacture of non-metallic building materials like cement and gypsum products have accounted for well over half of the industrial growth. There are, however, a few outstanding exceptions. Two sizable defence plants have been established in Nova Scotia, one to repair and overhaul naval aircraft and the other to build and repair radar and related electronic equipment. Considerable development has taken place in Newfoundland; besides plants for the manufacture of cement and gypsum wallboard and plaster, factories for producing boots and shoes, birch veneer, leather goods, industrial machinery and tanned leather were established, thus broadening the industrial base of the province. With these exceptions, most of the developments in the Atlantic Provinces have been either small and scattered or confined to the modernization and expansion of existing facilities.

Thus, manufacturing production in the Atlantic area has not quite kept pace with that in the more industrialized provinces of Ontario, Quebec and British Columbia. This is indicated by a drop in the Atlantic Provinces' share of the Canadian total shipments from 4.5 p.c. in 1949 to 3.9 p.c. in 1958. In number of persons employed there was a decrease of 4.6 p.c. for the Atlantic Provinces but an increase of 9.9 p.c. for Canada as a whole. Salaries and wages paid increased 50.7 p.c. for the Atlantic Provinces compared with 85.1 p.c. for Canada and selling value of factory shipments increased 50.8 p.c. compared with 77.5 p.c. for Canada. Increased employment since 1949 reported by Newfoundland was offset by a major decline in New Brunswick and minor declines in Prince Edward Island and Nova Scotia.

3.—Statistics of the Leading Industries of the Atlantic Provinces, 1958

	Industry	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
		No.	No.	$	$	$	$
	Newfoundland						
1	Pulp and paper[1]	2	2,971	15,098,491	26,736,005	29,702,009	61,003,231
2	Fish processing	35	2,326	3,909,858	8,089,308	6,602,920	15,661,753
3	Breweries	3	204	713,850	995,029	3,297,165	4,404,324
4	Bread and other bakery products	12	277	759,098	1,683,027	1,507,633	3,286,525
5	Carbonated beverages	11	168	438,363	926,959	2,079,878	3,051,493
6	Sash, door and planing mills	25	229	640,440	1,652,025	1,122,795	2,803,783
7	Printing and publishing	6	270	903,704	310,099	1,726,605	2,089,760
8	Sawmills	549	803	299,165	1,080,121	767,551	1,897,327[2]
9	Biscuits	3	158	334,491	632,161	752,311	1,429,283
10	Concrete products	6	60	127,830	565,938	492,357	1,097,963
11	Other leading industries[3]	11	930	3,215,994	5,926,970	5,509,342	11,810,837
	Totals, Leading Industries	**663**	**8,396**	**26,441,284**	**48,597,642**	**53,560,566**	**108,536,279**
	Totals, All Industries	**768**	**9,604**	**29,233,569**	**52,156,291**	**58,044,514**	**116,979,200**

For footnotes, see end of table, p. 670.

3.—Statistics of the Leading Industries of the Atlantic Provinces, 1958—concluded

	Industry	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
		No.	No.	$	$	$	$
	Prince Edward Island						
1	Butter and cheese	15	175	439,663	4,757,333	929,024	5,970,561
2	Fish processing	22	357	412,276	2,294,958	659,247	2,968,725
3	Feeds, stock and poultry, prepared	13	55	102,296	795,546	221,891	1,024,462
4	Fruit and vegetable preparations	7	80	118,984	514,180	412,290	876,597
5	Milk pasteurizing	11	46	116,965	393,886	211,360	626,221
6	Sawmills	48	99	87,312	277,825	215,407	504,601[2]
7	Other leading industries[4]	6	463	1,336,093	9,174,208	3,214,891	12,432,963
	Totals, Leading Industries	**122**	**1,275**	**2,613,589**	**18,207,936**	**5,864,110**	**24,404,130**
	Totals, All Industries	**179**	**1,632**	**3,389,985**	**19,203,457**	**7,266,497**	**26,887,728**
	Nova Scotia						
1	Primary iron and steel	3	3,999	17,036,986	25,557,796	24,282,826	54,815,366
2	Fish processing	138	4,015	8,035,952	30,203,103	15,263,985	47,229,001
3	Pulp and paper	3	1,227	4,848,442	8,419,060	11,749,698	21,668,376
4	Shipbuilding	17	2,470	8,514,745	6,431,018	10,523,946	17,280,939[2]
5	Sawmills	467	2,055	3,102,697	8,020,853	5,817,389	14,131,372[2]
6	Butter and cheese	21	701	1,956,792	7,617,078	3,603,132	11,547,796
7	Bread and other bakery products	76	867	2,157,562	4,571,026	4,364,892	9,285,552
8	Sash, door and planing mills	51	712	1,778,454	3,834,040	4,382,423	8,330,509
9	Printing and publishing	26	878	3,022,777	1,773,085	5,730,366	7,583,906
10	Milk pasteurizing	30	453	1,316,062	4,629,514	1,839,064	6,727,396
11	Confectionery	6	904	1,740,952	3,527,530	2,386,693	5,932,211
12	Knitted goods, other than hosiery	3	731	1,454,952	2,971,322	2,700,339	5,892,309
13	Miscellaneous food preparations	11	240	553,685	2,974,971	2,247,041	5,272,046
14	Fruit and vegetable preparations	17	515	1,023,448	2,907,827	1,897,959	5,088,261
15	Feeds, stock and poultry, prepared	16	121	300,922	4,041,776	986,962	5,075,859
16	Carbonated beverages	27	260	772,212	1,538,805	3,219,356	4,910,957
17	Miscellaneous wood products, *n.e.s.*	7	118	346,062	1,220,806	995,881	2,235,762
18	Other leading industries[5]	18	4,338	16,641,868	79,228,959	54,878,296	139,312,287
	Totals, Leading Industries	**937**	**24,604**	**74,604,570**	**199,468,569**	**156,870,248**	**372,319,905**
	Totals, All Industries	**1,297**	**29,010**	**86,005,553**	**217,263,603**	**176,997,949**	**411,929,247**
	New Brunswick						
1	Pulp and paper	7	4,018	17,996,129	41,711,123	45,586,585	94,438,898
2	Fish processing	126	2,427	3,606,663	12,793,479	6,499,401	18,941,771
3	Sawmills	300	2,170	4,189,165	10,439,709	7,398,512	18,118,105[2]
4	Slaughtering and meat packing	4	410	1,529,924	11,394,537	1,878,033	13,345,045
5	Butter and cheese	30	476	1,331,420	8,468,625	3,032,718	11,808,931
6	Miscellaneous food preparations	13	386	788,508	7,419,725	3,457,127	10,825,732
7	Bread and other bakery products	58	925	2,205,302	4,949,583	4,731,299	10,111,813
8	Sash, door and planing mills	61	675	1,639,114	4,794,756	2,494,038	7,407,709
9	Feeds, stock and poultry, prepared	16	175	455,408	6,185,080	960,418	7,208,188
10	Heating and cooking apparatus	3	645	1,920,889	2,864,545	3,442,575	6,141,888
11	Printing and publishing	19	642	2,081,798	1,018,716	3,611,701	4,710,619
12	Fertilizers	3	122	426,300	2,971,709	915,475	4,429,997
13	Boxes and bags, paper	9	226	595,875	2,086,480	1,278,020	3,368,063
14	Carbonated beverages	25	205	568,341	1,032,201	2,040,791	3,208,140
15	Sheet metal products	5	96	283,723	1,768,776	854,988	2,474,669
16	Footwear, leather	4	358	723,952	1,053,881	1,390,785	2,419,091
17	Biscuits	3	196	505,211	1,193,301	1,057,901	2,284,573
18	Milk pasteurizing	22	135	343,526	1,463,235	688,919	2,231,180
19	Confectionery	4	305	622,816	1,091,573	1,082,395	2,220,932
20	Other leading industries[6]	10	3,496	12,327,454	35,321,179	26,132,478	62,832,287
	Totals, Leading Industries	**722**	**18,088**	**54,141,518**	**160,022,213**	**118,534,159**	**288,527,631**
	Totals, All Industries	**939**	**20,744**	**61,077,171**	**170,560,975**	**130,668,021**	**312,021,817**

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[1] Publication of these figures was authorized by the firms concerned.

[2] Reported on a production basis.

[3] Includes dairy products, *n.e.s.*; cement, hydraulic; gypsum products; miscellaneous food preparations; paints, varnishes and lacquers; railway rolling-stock; slaughtering and meat packing; and machinery, industrial.

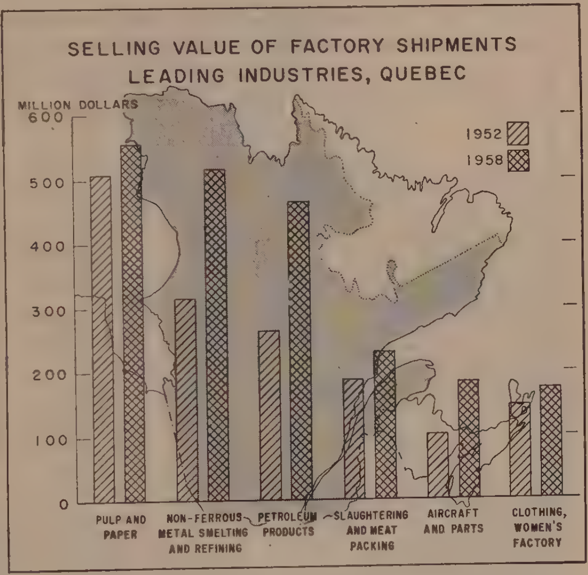
[4] Includes bags, cotton and jute; fertilizers; printing and publishing; and slaughtering and meat packing.

[5] Includes breweries; cotton yarn and cloth; boxes and bags, paper; bridge and structural steel work; wire and wire goods; miscellaneous iron and steel products; aircraft and parts; railway rolling-stock; salt; coke and gas; and petroleum products.

[6] Includes breweries; brass and copper products; brooms, brushes and mops; cement, hydraulic; railway rolling-stock; shipbuilding; and sugar refining.

Subsection 2.—The Manufactures of Quebec

Quebec has long ranked as the second largest industrial province of Canada. The province experienced a great industrial expansion following World War II, an expansion not confined to existing industrial areas, but spreading to many towns and villages in the accessible areas of the province and into new areas in the hinterland. In 1958 its output of $6,754,798,278 represented about 30 p.c. of Canada's total selling value of factory shipments.


SELLING VALUE OF FACTORY SHIPMENTS
LEADING INDUSTRIES, QUEBEC

Several important factors have contributed to the development of industry in Quebec. Its geographic situation is extremely favourable, including as it does the great water highway of the St. Lawrence River with its excellent harbour at Montreal, 800 miles inland. There is also an extensive road network linking the small rural areas with the larger industrial centres. Other significant factors include abundant natural resources in forests, water power, minerals, agricultural lands, and, of even more importance, an industrious and stable population.

The pulp and paper industry, with an output valued at $556,228,761 in 1958, continues as Quebec's leading manufacture. The province is a principal world centre for the production of newsprint, having 55 major pulp and paper plants concentrated in the Trois Rivières and Shawinigan Falls districts, as well as along the Saguenay, Ottawa and St. Lawrence Rivers. The production of non-ferrous metals has expanded considerably during the past decade. Aluminum, which until a few years ago was produced only in Quebec, is now also produced in British Columbia but Quebec still maintains its impressive lead in the output of this metal. The province, in its Montreal area, also boasts the major oil refinery district in the country. Two of the most important industrial developments now under way in Quebec are the Ungava iron ore project and the new titanium industry at Allard Lake and Sorel.

Quebec's industries are not as diversified as those of Ontario, although a number produce more than half of the Canadian total. The manufacture of pulp and paper occupies the premier position; by the end of 1958 it accounted for about 8 p.c. of the gross value of Quebec's manufactures and for 39.9 p.c. of the Canadian total for this industry. Other large industries in which Quebec predominates include: tobacco, cigars and cigarettes with 87.1 p.c. of the Canadian total production; women's factory clothing with 69.8 p.c.; cotton yarn and cloth 68.2 p.c.; leather footwear 56.3 p.c.; men's factory clothing 54.3 p.c.: synthetic textiles 50.7 p.c.; miscellaneous electrical apparatus and supplies 47.9 p.c.; non-ferrous metal smelting and refining 45.6 p.c.; medicinal and pharmaceutical preparations 45.6 p.c.; shipbuilding and repairs 42.4 p.c.; railway rolling-stock 41.8 p.c.; aircraft and parts 40.0 p.c.; acids, alkalies and salts 38.3 p.c.; brass and copper products 35.5 p.c.; petroleum products 34.2 p.c.; furniture 33.7 p.c.; and miscellaneous chemical products 31.9 p.c.

Despite the slowing down of Canadian production which began in the autumn of 1957 and continued throughout most of 1958, Quebec recorded a small increase of 2.0 p.c. in selling value of factory shipments between 1956 and 1958. In employment, however, there was a loss of 3.8 p.c. in the same period, but this compares with a loss of 4.7 p.c. for Canada as a whole. The non-durable goods industries, which contribute about 63 p.c. of the total manufacturing production of the province, reported an increase of 6.5 p.c. in the selling value of factory shipments and a decline of 1.8 p.c. in the number of persons employed. The durable goods industries were much more severely affected by the recession and reported a drop of 5.6 p.c. in shipments and of 7.0 p.c. in number of employees.

4.—Statistics of the Leading Industries of Quebec, 1958

	Industry	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
		No.	No.	$	$	$	$
1	Pulp and paper	55	27,100	126,473,048	233,916,862	281,137,414	556,228,761
2	Non-ferrous metal smelting and refining	11	11,438	55,351,405	337,215,962	145,706,042	517,372,767[1]
3	Petroleum products	8	2,969	15,930,421	279,375,653	171,663,141	467,749,150[1]
4	Slaughtering and meat packing	52	5,408	19,998,663	187,944,206	44,098,078	231,513,935
5	Aircraft and parts	25	14,449	66,292,029	70,349,998	113,100,033	184,945,745[1]
6	Clothing, women's factory	416	17,140	44,695,123	95,180,157	72,296,983	174,733,860
7	Tobacco, cigars and cigarettes	16	7,297	27,608,504	95,690,662	75,814,683	171,610,647
8	Miscellaneous electrical apparatus and supplies	45	13,194	54,283,434	71,193,521	87,167,530	166,481,500
9	Butter and cheese	506	4,992	14,513,452	125,117,964	30,499,013	159,096,720
10	Clothing, men's factory	303	15,079	37,496,545	82,204,935	60,062,941	143,636,208
11	Cotton yarn and cloth	20	12,549	34,376,744	89,388,078	50,091,081	143,506,795
12	Railway rolling-stock	6	9,827	38,356,733	82,405,728	39,173,617	123,623,418[1]
13	Miscellaneous food preparations	82	2,887	9,950,778	69,360,075	42,381,201	111,049,885
14	Furniture	607	11,326	32,792,934	50,114,077	53,265,118	104,143,494
15	Acids, alkalies and salts	18	4,205	20,483,210	41,978,951	50,805,882	99,892,024
16	Bread and other bakery products	924	10,456	28,707,406	46,687,888	47,017,004	96,883,092
17	Machinery, industrial	68	7,268	28,209,228	39,702,270	45,059,963	91,072,715
18	Boxes and bags, paper	69	5,510	17,902,006	55,345,920	34,679,507	90,342,945
19	Synthetic textiles and silk	33	9,292	28,606,330	45,366,865	40,587,774	89,912,855
20	Feeds, stock and poultry, prepared	343	2,294	6,523,100	68,136,924	16,099,142	85,083,063
21	Footwear, leather	145	11,714	28,441,386	40,259,808	41,991,479	82,902,361
22	Sheet metal products	109	4,621	18,508,341	38,891,104	39,677,904	79,118,485
23	Printing and publishing	78	6,805	29,132,849	22,372,205	54,516,533	77,113,139
24	Sawmills	1,287	7,458	15,428,911	47,768,727	27,393,294	76,362,970[1]
25	Bridge and structural steel work	18	5,167	23,431,145	32,756,416	37,578,394	70,968,327[1]
26	Medicinal and pharmaceutical preparations	86	3,943	14,989,731	21,178,292	50,118,275	70,655,146
27	Printing and bookbinding	610	7,803	27,974,948	25,814,381	44,037,686	70,287,409
28	Miscellaneous chemical products	85	5,902	23,340,197	34,449,150	33,973,114	69,470,876
29	Shipbuilding	11	6,541	26,640,443	24,834,653	37,220,171	62,850,338[1]
30	Brass and copper products	39	2,657	10,966,571	40,500,122	20,904,435	62,559,617
31	Breweries	5	2,553	11,655,644	16,370,819	44,811,045	62,132,264
32	Carbonated beverages	187	2,581	8,750,380	17,069,912	41,650,957	60,009,383
33	Primary iron and steel	16	3,560	15,194,173	21,094,850	34,070,779	58,836,090
34	Sash, door and planing mills	671	5,405	14,102,756	33,376,418	23,921,441	58,306,762
35	Rubber goods, including footwear	33	5,715	18,779,505	23,258,874	29,319,497	54,519,792
36	Concrete products	230	3,810	13,392,439	28,535,328	24,633,081	54,466,329
37	Telecommunication equipment	25	5,708	25,897,100	26,894,955	27,567,947	51,999,212
38	Distilled liquors	7	2,076	8,774,422	17,638,606	34,169,763	51,639,536
39	Knitted goods, other than hosiery	84	5,663	12,913,984	30,414,891	21,099,830	51,537,504
40	Wire and wire goods	39	2,964	11,876,721	28,301,394	19,027,497	48,501,134
	Totals, Leading Industries[2]	**7,372**	**297,326**	**1,068,742,739**	**2,738,457,601**	**2,188,389,269**	**5,083,116,253**
	Totals, All Industries	**11,828**	**429,358**	**1,476,605,908**	**3,597,784,845**	**2,970,774,755**	**6,754,798,278**

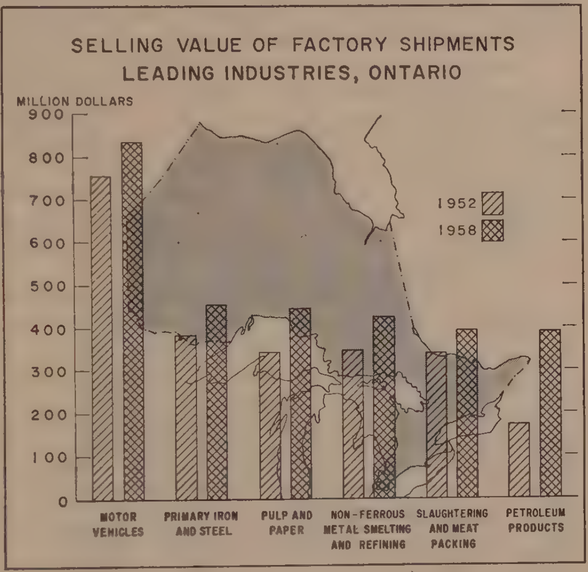
[1] Reported on a production basis.

[2] Sugar refining is also a leading industry but statistics are confidential.

Subsection 3.—The Manufactures of Ontario

Ontario is one of the world's major industrial areas. Here the proximity of raw materials, cheap hydro-electric power and a strategic location in relation to export markets, not only on this Continent but overseas, have been the decisive factors of development.

Most of the manufactures and most of the population are located in the southern area of the province, which has the inestimable advantage of bordering on the St. Lawrence–Great Lakes waterway system, giving access westward to the heart of the Continent and eastward to the shipping routes of the world. Furthermore, this same waterway is also the source of most of Ontario's developed hydro-electric power. Many new industrial areas are being created as new industries and branch plants of established industries are increasingly being located in the smaller towns.


SELLING VALUE OF FACTORY SHIPMENTS
LEADING INDUSTRIES, ONTARIO

Despite the great industrial progress made by other provinces, Ontario continues to maintain its predominance and in 1958 produced about 50 p.c. of the nation's manufactured goods. A vast increase of steel ingot capacity has been made possible by developments at the Steep Rock iron mines, northwest of Lake Superior. Huge investments have gone into the construction of plant and equipment for a whole group of new products based on Alberta oil flowing eastward by pipeline. Significant developments are taking place in synthetic rubber, synthetic textiles, and industrial and consumer chemicals. Ontario has continued to gain in such traditional lines as motor vehicles, industrial and farm machinery, and the manufacture of household equipment. The same may be said of other "hard" goods like business and office machinery and electrical apparatus and supplies. Numerous plants making aircraft components and building materials have favoured the Toronto area, while chemical and synthetic textile plants have been rising in the vicinity of Sarnia and along the lower reaches of the St. Lawrence River between Cornwall and Kingston.

Ontario has the greatest diversification of manufacturing production of any province. Certain industries, such as the manufacture of motor vehicles, motor vehicle parts, heavy electrical machinery, agricultural implements, machine tools, starch and glucose, and the processing of raw tobacco, are carried on almost exclusively in this province. Of the forty leading industries in Canada in 1958, a substantial number were dominated by Ontario's share of the total production. These industries, with the percentage which the production of each bore to the 1958 Canadian total, were: motor vehicles 98.6 p.c.; motor vehicle parts 94.5 p.c.; heavy electrical machinery 90.1 p.c.; rubber goods 82.1 p.c.; primary iron and steel 77.4 p.c.; telecommunication equipment 75.9 p.c.; iron castings 68.5 p.c.; fruit and vegetable preparations 68.0 p.c.; industrial machinery 63.3 p.c.; miscellaneous chemical products 62.6 p.c.; brass and copper products 60.0 p.c.; sheet metal products 59.3 p.c.; printing and bookbinding 58.0 p.c.; aircraft and parts 53.5 p.c.; acids, alkalies and salts 52.6 p.c.; boxes and bags, paper 49.8 p.c.; printing and publishing 48.4 p.c.; furniture 48.3 p.c.; miscellaneous electrical apparatus and supplies 48.0 p.c.; synthetic textiles 45.8 p.c.; stock and poultry feeds 44.0 p.c.; and non-ferrous metal smelting and refining 37.6 p.c.

The medium-sized industries (those with a total production of over $100,000,000) in which Ontario dominated included: agricultural implements with 91.7 p.c.; soaps and washing compounds 89.0 p.c.; household and office machinery 81.1 p.c.; refrigerators, vacuum cleaners, etc. 77.0 p.c.; hardware, tools and cutlery 72.6 p.c.; heating and cooking apparatus 68.9 p.c.; boilers, tanks and plate work 60.7 p.c.; confectionery 57.6 p.c.; and knitted goods other than hosiery 44.3 p.c.

Ontario being the largest producer of durable goods, which are more severely affected by changes in the business cycle than consumer goods, was consequently affected more than any other province with the exception of Nova Scotia by the downturn in manufacturing production of 1957 and 1958. The selling value of factory shipments which amounted to $10,864,028,332 was 1.9 p.c. lower than in the previous year when shipments were the highest on record. The drop in employment amounted to 5.8 p.c. compared with a decrease of 5.1 p.c. for Canada as a whole; producers of non-durable goods in Ontario reported a drop of 2.6 p.c. in number of persons employed and producers of durable goods a drop of 9.7 p.c.

5.—Statistics of the Leading Industries of Ontario, 1958

	Industry	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
		No.	No.	$	$	$	$
1	Motor vehicles	8	25,478	126,108,526	565,227,943	248,281,580	835,537,065
2	Primary iron and steel	19	21,249	109,585,754	196,541,814	235,796,736	456,943,390
3	Pulp and paper	41	20,218	97,642,362	201,972,570	215,632,245	447,108,816
4	Non-ferrous metal smelting and refining	10	8,636	41,189,632	246,135,300	166,188,347	426,897,001[1]
5	Slaughtering and meat packing	65	9,367	39,864,885	317,936,921	75,715,253	395,608,125
6	Petroleum products	14	5,337	29,374,546	255,695,530	120,861,674	393,461,530[1]
7	Motor vehicle parts	120	16,730	72,697,592	148,341,510	125,378,377	279,562,626
8	Rubber goods, including footwear	46	14,167	57,433,010	105,101,144	145,191,493	253,309,301
9	Aircraft and parts	36	21,415	100,433,598	98,778,008	145,645,596	247,216,481[1]
10	Machinery, heavy electrical	57	18,112	89,496,349	85,438,086	127,676,661	220,574,652
11	Sheet metal products	240	11,390	47,661,750	104,468,192	91,067,411	197,589,106
12	Machinery, industrial	227	14,004	59,204,935	85,048,458	109,115,550	196,884,329
13	Fruit and vegetable preparations	176	10,305	30,217,360	119,949,696	70,122,980	188,242,952
14	Butter and cheese	401	7,974	28,617,941	135,824,336	43,265,903	184,560,093
15	Telecommunication equipment	89	12,748	46,759,244	91,493,301	90,442,869	180,742,858
16	Castings, iron	86	9,515	39,284,749	94,033,885	74,831,392	173,635,775
17	Miscellaneous electrical apparatus and supplies	107	11,254	44,205,292	84,692,677	82,329,602	167,095,053
18	Printing and publishing	285	14,005	61,661,813	41,487,919	115,694,641	158,534,110
19	Printing and bookbinding	782	13,996	54,905,828	57,391,225	91,823,128	149,839,124
20	Furniture	720	14,882	48,482,990	70,133,600	76,865,404	149,132,186
21	Bread and other bakery products	845	14,927	46,423,539	65,627,595	72,465,083	142,759,435
22	Miscellaneous food preparations	112	4,554	17,267,357	88,098,048	52,652,320	142,248,450
23	Boxes and bags, paper	107	8,417	30,772,813	83,484,777	54,017,230	138,058,721
24	Acids, alkalies and salts	30	5,140	25,623,478	62,042,001	62,058,827	137,203,754
25	Miscellaneous chemical products	128	5,766	26,928,224	64,908,954	64,041,968	136,051,748
26	Agricultural implements	27	10,030	44,105,299	72,126,603	54,544,585	122,111,559
27	Miscellaneous paper products	105	6,852	25,266,990	64,387,295	55,128,973	120,298,105
28	Soaps, washing compounds and cleaning preparations	67	3,155	14,684,826	48,854,609	68,333,655	117,484,774
29	Hardware, tools and cutlery	308	9,861	38,531,021	39,149,367	74,524,036	114,925,346
30	Refrigerators, vacuum cleaners and appliances	55	6,397	25,672,123	53,637,895	54,184,851	111,878,801
31	Feeds, stock and poultry, prepared	352	2,768	8,891,945	82,595,504	27,013,870	110,746,228
32	Machinery, household, office and store	45	5,988	25,612,015	49,990,976	57,988,962	110,311,401
33	Brass and copper products	90	5,613	22,836,458	63,560,558	42,957,173	105,842,600
34	Tobacco processing	10	1,522	4,187,372	94,644,572	9,174,664	104,100,475[1]
35	Railway rolling-stock	12	4,601	20,234,674	63,960,801	32,484,002	97,325,369[1]
36	Breweries	18	2,798	14,071,473	21,817,722	70,161,885	94,152,129
37	Distilled liquors	9	2,199	8,983,244	28,636,954	61,424,078	89,056,493
38	Heating and cooking apparatus	67	5,434	21,745,155	45,351,182	42,492,552	89,038,305
39	Flour mills	40	1,778	6,712,311	70,972,443	15,346,301	87,346,778
40	Wire and wire goods	79	5,487	23,284,214	46,597,699	37,796,510	86,556,735
	Totals, Leading Industries	**6,035**	**394,069**	**1,676,662,687**	**4,316,137,670**	**3,460,718,367**	**7,959,971,779**
	Totals, All Industries	**13,276**	**606,362**	**2,412,654,652**	**5,704,319,497**	**4,914,073,665**	**10,864,028,332**

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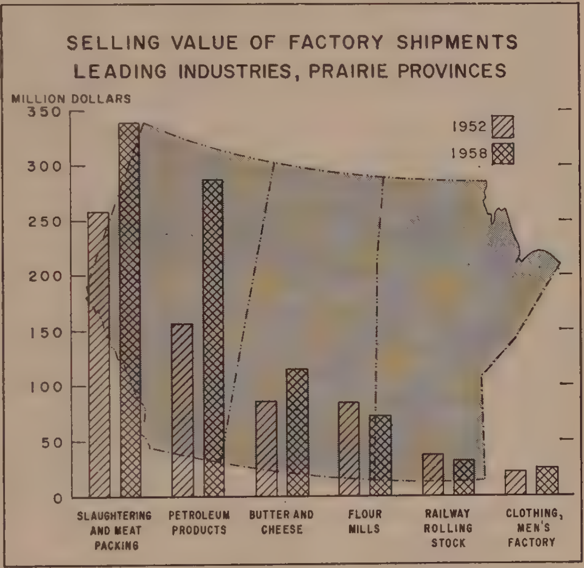
[1] Reported on a production basis.

Subsection 4.—The Manufactures of the Prairie Provinces

In the Prairie Provinces the leading industries have traditionally been those based on agricultural resources—grain-growing, cattle-raising and dairying areas. But recently slaughtering and meat packing has emerged as the major industry, followed very closely by petroleum products. The latter industry has made tremendous strides in the mid-west. In 1956 it ranked highest in terms of selling value of factory shipments but dropped back to second place in 1957 and 1958. Of greater significance is the fact that it has increased its proportion of the total manufacturing production of the Prairie Provinces from 8.5 p.c. in 1949 to 15.5 p.c. in 1958. The expansion in manufacturing production in the Prairie Provinces as a unit between 1949 and 1958 has kept pace with that of Canada as a whole; the Prairie Provinces' share of total shipments amounted to approximately 8.5 p.c. in both years.



In the Prairie Provinces the nature of development varies from one province to another. Alberta has moved to the forefront, especially since 1950. There, recent emphasis has been on the manufacture of machinery and equipment for the expanding oil and gas industries. Chemicals, particularly petrochemicals, have made striking gains and now embrace various rayon intermediates and polythene plastics, as well as fertilizers and the manufacture of other inorganic products such as caustic soda and chlorine. Agriculture-based products still rank high in the province, as do such structural materials as steel, concrete products and hydraulic cement. Sizable gains have also been made by food-processing plants.

In Manitoba, the early commercial centre of the mid-west, water power, forest and, more recently, mineral resources have given rise to a diversification of industrial production, although slaughtering and meat packing is still in first place and butter and cheese in third. The province experienced great development in manufacturing production during the past decade but, on a percentage basis, did not keep pace with the other Prairie Provinces. The change has been largely one of emphasis rather than magnitude—the emphasis moving away from the production of food and clothing to the production of goods of mineral origin such as iron and steel, non-metallic mineral products, electrical apparatus and products of petroleum and coal.

Developments in Saskatchewan have continued along more or less traditional lines. The largest gains in shipments have been recorded by the food processing industries and a substantial increase has also been shown by the building materials group, which includes non-metallic mineral products and lumber. However, the largest single gain in employment has been in the refining of oil for local use.

Considering the Prairie Provinces as an economic unit, 4,366 establishments reporting in 1958 furnished employment to 92,525 persons who received $326,223,056 in salaries and wages. They shipped goods valued at the factory at $1,873,601,758 and spent $1,091,598,993 for materials.

6.—Statistics of the Leading Industries of the Prairie Provinces, 1958

	Industry	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
		No.	No.	$	$	$	$
	Manitoba						
1	Slaughtering and meat packing...	12	3,209	12,523,879	102,439,087	25,898,374	128,124,870
2	Petroleum products..............	4	703	2,910,954	34,189,442	20,749,388	57,062,873[1]
3	Butter and cheese................	66	1,272	4,052,361	25,894,482	7,161,742	34,056,524
4	Railway rolling-stock............	4	4,214	15,653,150	15,736,777	16,610,902	32,869,897[1]
5	Clothing, men's factory..........	51	2,876	6,185,048	14,265,077	9,526,106	24,014,077
6	Furniture........................	113	1,871	5,773,680	11,641,508	9,622,538	21,462,443
7	Flour mills......................	7	497	1,447,802	16,015,196	3,649,895	19,604,110
8	Miscellaneous food preparations...	21	571	2,061,463	12,854,253	5,723,312	19,510,413
9	Printing and publishing...........	78	1,968	6,828,309	5,346,207	13,337,147	18,868,410
10	Bread and other bakery products.	150	1,801	5,833,265	7,380,248	8,845,361	16,803,240
11	Pulp and paper...................	3	550	2,499,341	5,573,834	9,799,099	16,683,440
12	Breweries........................	6	637	2,912,338	2,802,281	10,289,904	13,354,251
13	Clothing, women's factory.......	25	1,467	4,008,023	7,041,919	6,248,574	13,283,889
14	Printing and bookbinding........	86	1,359	4,913,040	4,168,532	8,100,050	12,325,161
15	Boxes and bags, paper............	10	694	2,060,821	7,199,180	4,273,562	11,471,897
16	Sheet metal products.............	33	924	3,371,649	6,063,871	5,166,825	11,452,071
17	Miscellaneous iron and steel products..........................	14	696	2,915,801	4,478,053	4,526,566	8,825,155
18	Feeds, stock and poultry, prepared	38	229	715,325	6,314,622	2,059,665	8,449,454
19	Carbonated beverages.............	22	341	1,154,502	2,226,539	4,483,661	6,882,135
20	Paints, varnishes and lacquers....	5	275	852,914	3,790,435	2,811,775	6,554,913
21	Agricultural implements..........	16	455	1,624,884	3,447,889	3,177,300	6,389,318
22	Miscellaneous paper products.....	6	198	543,170	2,487,224	3,514,129	6,016,020
23	Concrete products................	16	483	1,703,468	3,554,179	2,389,614	5,914,148
24	Bags, cotton and jute............	3	196	608,546	4,480,521	1,327,848	5,812,684
25	Biscuits.........................	3	346	1,023,506	2,593,709	2,612,282	5,300,706
26	Machinery, industrial............	14	423	1,604,961	2,014,237	3,089,728	5,162,859
27	Other leading industries[2].........	11	4,090	16,794,374	25,965,619	33,825,908	62,631,831
	Totals, Leading Industries...	**817**	**32,345**	**112,576,574**	**339,964,921**	**228,821,255**	**578,886,789**
	Totals, All Industries.........	**1,634**	**42,382**	**142,859,485**	**397,453,172**	**284,367,542**	**694,051,323**
	Saskatchewan						
1	Petroleum products..............	11	1,183	5,872,466	50,255,873	29,241,309	82,409,038
2	Slaughtering and meat packing...	10	1,361	5,350,647	36,602,149	10,430,871	47,338,510
3	Flour mills......................	9	769	2,912,376	30,730,463	10,176,248	41,025,500
4	Butter and cheese................	56	1,371	4,285,732	25,080,299	8,448,317	34,452,627
5	Bread and other bakery products.	103	1,105	3,592,944	4,663,789	5,767,691	10,778,823
6	Breweries........................	5	357	1,621,392	2,598,993	8,047,313	10,724,498
7	Printing and publishing...........	89	1,173	3,878,080	2,150,267	6,960,156	9,237,985
8	Carbonated beverages.............	27	271	878,994	1,889,573	3,331,673	5,434,231
9	Sash, door and planing mills......	28	363	1,148,672	2,671,602	2,189,420	4,944,708
10	Sheet metal products.............	8	252	862,365	2,829,720	1,844,849	4,710,323
11	Concrete products................	21	236	758,446	2,099,992	2,042,602	4,262,464
12	Sawmills.........................	321	673	738,274	1,998,083	1,495,973	3,598,838[1]
13	Feeds, stock and poultry, prepared	12	87	267,562	2,297,681	845,978	3,144,421
14	Printing and bookbinding.........	39	256	894,494	659,537	1,389,437	2,063,441
	Totals, Leading Industries[3]...	**739**	**9,457**	**33,062,444**	**166,528,021**	**92,211,837**	**264,125,407**
	Totals, All Industries.........	**970**	**12,283**	**43,228,392**	**198,833,974**	**123,394,168**	**331,298,441**
	Alberta						
1	Slaughtering and meat packing...	17	4,046	16,136,180	139,155,653	26,968,547	165,728,697
2	Petroleum products..............	22	2,214	11,534,922	81,538,769	64,278,456	150,075,129[1]
3	Butter and cheese................	94	2,073	6,515,917	34,695,053	10,495,073	45,908,380
4	Flour mills......................	10	671	2,193,290	23,747,166	7,138,875	31,161,224
5	Sash, door and planing mills......	98	1,569	4,791,199	13,167,000	9,794,705	23,090,003
6	Concrete products................	44	899	3,756,844	11,668,035	9,752,439	21,750,361
7	Bread and other bakery products.	152	1,971	6,255,020	8,359,813	10,721,103	19,584,506
8	Breweries........................	6	563	2,410,055	4,227,901	13,693,003	18,100,268
9	Printing and publishing...........	77	1,541	5,462,233	4,569,795	12,140,384	16,828,306
10	Primary plastics.................	4	496	2,431,585	5,778,077	9,141,852	15,884,012
11	Sawmills.........................	354	1,718	3,475,849	7,537,056	6,694,512	14,684,784[1]
12	Acids, alkalies and salts..........	4	447	2,339,938	3,556,056	8,948,442	13,687,576
13	Bridge and structural steel........	5	1,106	4,499,938	8,744,984	4,342,239	13,174,251[1]
14	Castings, iron....................	11	528	2,177,627	7,527,907	5,718,502	12,560,221
15	Cement, hydraulic................	3	369	1,793,842	1,319,966	8,772,611	11,137,554

For footnotes, see end of table.

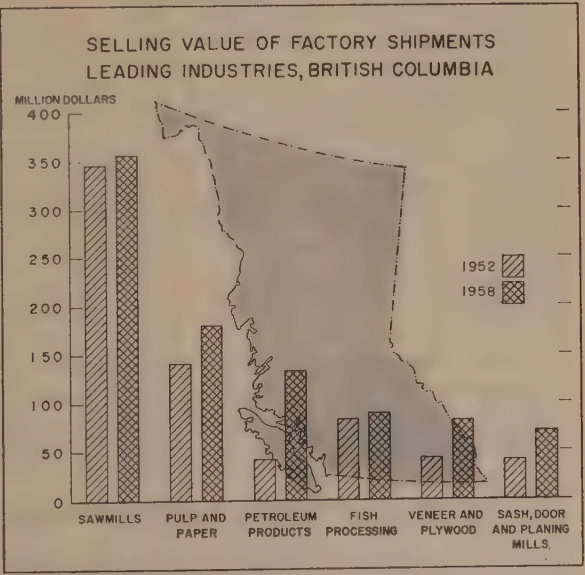
6.—Statistics of the Leading Industries of the Prairie Provinces, 1958—concluded

	Industry	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
		No.	No.	$	$	$	$
	Alberta—concluded						
16	Feeds, stock and poultry, prepared	60	296	985,081	8,623,987	2,377,078	11,116,082
17	Sheet metal products	23	551	1,884,751	5,669,455	3,977,556	9,919,483
18	Clothing, men's factory	9	808	2,051,228	4,983,704	4,046,029	9,175,812
19	Furniture	83	900	2,608,225	4,665,153	4,443,377	9,117,402
20	Machine shops	66	850	3,506,443	3,522,015	4,957,204	8,793,491
21	Aircraft and parts	5	1,329	5,628,902	1,347,428	7,038,975	8,444,320[1]
22	Miscellaneous food preparations	11	238	802,286	5,425,542	2,685,587	8,138,822
23	Printing and bookbinding	80	939	3,568,591	2,599,267	5,406,400	8,067,840
24	Other leading industries[4]	10	3,794	15,970,848	42,133,996	34,818,826	77,449,200
	Totals, Leading Industries	**1,248**	**29,916**	**112,780,794**	**434,563,778**	**278,351,775**	**723,577,724**
	Totals, All Industries	**1,762**	**37,860**	**140,135,179**	**495,311,847**	**339,439,455**	**848,251,994**

[1] Reported on a production basis. [2] Includes aircraft and parts; bridge and structural steel work; cement, hydraulic; gypsum products; non-ferrous metal smelting and refining; primary iron and steel; and sugar refining. [3] Castings, iron; cement, hydraulic; and non-ferrous metal smelting and refining are also leading industries. Statistics, however, are confidential since there are fewer than three establishments. [4] Includes fertilizers; pulp and paper; railway rolling-stock; non-ferrous metal smelting and refining; and sugar refining.

Subsection 5.—The Manufactures of British Columbia

British Columbia, with factory shipments totalling $1,798,960,459 in 1958, ranked third among the provinces in manufacturing production. Forest resources, fisheries, minerals and electric power have given a broad base and wide diversification to its industrial development. British Columbia holds the dominant position among the provinces in the production of wood products, its output in 1958 making up 41 p.c. of the Canadian total. Sawmilling, pulp and paper, veneer and plywood, and sash, door and planing mills ranked first, second, fifth and sixth, respectively, in 1958. Third in importance was the petroleum products industry which moved up from seventh place in 1953 as a result of the construction of the Trans Mountain oil pipeline. In fourth place was fish processing, based principally on the estuarial salmon fisheries. The province accounted for approximately 50 p.c. of the output of the fish processing industry in that year and is mainly responsible for Canada's position as a major fish exporting nation.



Recently, many new developments have been taking place in areas far removed from older established industrial centres. Growing lines of communication and transportation are fanning out from and leading into formerly locked interior communities to tap a vast new potential and offer new sources of provincial economic unity and strength. Factories and plants in remote sections are drawing greater value in employment and dollars from natural resources. The growth of the province industrially may be indicated by the increase in employment which in 1958 was two and one-half times the prewar figure. In dollar terms, gross value of manufacturing was up 650 p.c. since 1939 and the consumption of 7,700,000,000 kwh. of electric power by manufactures during 1958 marked a steady upward climb of 200 p.c. during the past decade. British Columbia ranks second among the provinces in available water power resources and its hydraulic development, which at the end of 1958 totalled 3,312,160 hp., was exceeded only by Quebec and Ontario.

Despite the substantial declines during 1957 and 1958, manufacturing in British Columbia fared better than in Canada as a whole since 1953; in comparing 1958 with that year, employment for British Columbia was 6.8 p.c. higher while for Canada as a whole it was 2.9 p.c. lower. Also, in value of shipments British Columbia reported an increase of 31.6 p.c. as compared with one of 24.6 p.c. for Canada. There was an expansion in manufacturing production in British Columbia during 1954 when the remainder of Canada was experiencing a minor recession, and growth continued in that province, as in the remainder of the country, through 1955 and 1956. However, during the slowdown of 1957 and 1958 the decline in British Columbia was more severe than for Canada as a whole. For these two years the province experienced a decline of 7.7 p.c. in number of employees and 3.2 p.c. in selling value of factory shipments, while for Canada as a whole the number of employees was down 4.7 p.c. and the value of factory shipments increased 2.4 p.c.

7.—Statistics of the Leading Industries of British Columbia, 1958

	Industry	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
		No.	No.	$	$	$	$
1	Sawmills	1,418	27,110	101,626,836	188,082,448	162,109,783	356,104,461[1]
2	Pulp and paper	14	7,315	39,332,781	70,646,248	102,419,722	181,208,729
3	Petroleum products	9	1,551	8,129,287	77,570,220	51,558,413	133,624,242[1]
4	Fish processing	44	2,941	10,958,282	65,103,508	29,127,964	89,309,539
5	Veneer and plywood	17	6,103	24,033,393	43,193,048	37,456,169	83,017,028
6	Sash, door and planing mills	197	3,559	13,339,989	46,690,131	22,884,565	70,427,256
7	Slaughtering and meat packing	12	1,574	6,289,856	48,540,118	9,305,929	57,907,977
8	Miscellaneous food preparations	44	779	2,640,026	34,807,214	10,912,264	45,746,308
9	Butter and cheese	33	1,845	7,320,413	23,019,546	10,644,208	35,391,034
10	Shipbuilding	20	3,673	17,866,517	9,150,137	24,029,231	33,628,689[1]
11	Printing and publishing	84	3,105	14,297,404	7,179,398	24,307,828	31,737,393
12	Fruit and vegetable preparations	56	1,884	4,660,267	18,991,324	6,801,070	31,474,297
13	Bread and other bakery products	307	3,213	10,871,433	13,111,569	16,946,230	30,926,877
14	Fertilizers	4	1,100	5,144,492	13,518,720	14,170,343	27,163,969
15	Sheet metal products	43	1,145	5,243,027	14,896,862	10,921,819	26,394,636
16	Boxes and bags, paper	16	1,187	4,441,327	14,240,216	10,017,352	24,227,745
17	Bridge and structural steel	6	1,431	6,954,504	11,469,061	11,643,619	23,282,797[1]
18	Furniture	209	2,003	6,993,352	11,053,186	10,543,446	21,701,158
19	Breweries	8	696	3,026,516	4,376,583	15,427,488	20,198,046
20	Feeds, stock and poultry, prepared	40	627	2,289,574	14,683,415	4,728,339	19,829,158
	Totals, Leading Industries[2]	**2,581**	**72,841**	**295,459,276**	**730,322,952**	**585,955,782**	**1,343,301,339**
	Totals, All Industries	**4,072**	**100,222**	**406,628,209**	**965,939,626**	**786,620,211**	**1,798,960,459**

[1] Reported on a production basis. [2] Non-ferrous metal smelting and refining is also a leading industry. Statistics, however, are confidential since there are fewer than three firms reporting.

Section 2.—Manufacturing Industries in Urban Centres

Table 8 indicates the extent to which the manufacturing industries are concentrated in urban centres and shows, by province, the proportion of the selling value of factory shipments contributed by cities and towns having shipments of over $1,000,000 each. In the more highly industrialized provinces of Ontario and Quebec such cities and towns accounted for 77 p.c. and 94 p.c., respectively, of the total manufactures of those provinces in 1958, while in the Atlantic Provinces and British Columbia, where sawmilling, fish packing and dairying are leading industries, the proportions were 68 p.c. and 49 p.c., respectively. In the Prairie Provinces, manufacturing is confined largely to a few urban centres.

A trend toward the decentralization of industry is apparent in all provinces but the most striking change has been shown by Ontario where there has been a recent tendency to establish new industry in smaller urban centres and where many new one-industry areas have been opened up. For Canada as a whole, the percentage of manufactures accounted for by urban centres having shipments of over $1,000,000 was 80.5 in 1955 but dropped to 79.4 by 1958.

8.—Urban Centres, Each with Selling Value of Factory Shipments of Over $1,000,000, Number of Establishments and Total Shipments in these Centres as a Percentage of the Provincial Total, by Province, 1958, and Totals for Canada, 1956-58.

Province or Territory	Urban Centres with Shipments of Over $1,000,000 Each	Establishments Reporting in Urban Centres with Shipments of Over $1,000,000	Shipments of Urban Centres having $1,000,000 or Over	Total Shipments of Each Province	Shipments of Urban Centres having $1,000,000 or Over as a Percentage of Total Shipments in the Province
	No.	No.	$	$	
Newfoundland	6	134	74,465,382	116,979,200	63.7
Prince Edward Island	3	61	19,054,091	26,887,728	70.9
Nova Scotia	26	483	251,998,056	411,929,257	57.0
New Brunswick	15	349	245,284,609	312,021,817	78.6
Quebec	195	8,200	6,351,351,193	6,754,798,278	94.0
Ontario	186	9,003	8,351,174,043	10,864,028,332	76.9
Manitoba	13	1,106	591,551,965	694,051,323	85.2
Saskatchewan	12	439	271,616,372	331,298,441	82.0
Alberta	17	962	569,663,570	848,251,984	67.1
British Columbia	30	2,071	877,812,940	1,798,960,459	48.8
Yukon and Northwest Territories	—	—	—	3,979,489	—
Canada, 1958	**503**	**22,808**	**17,603,972,221**	**22,163,186,308**	**79.4**
1957	**499**	**23,542**	**17,886,715,270**	**22,183,594,311**	**80.6**
1956	**498**	**23,289**	**17,262,050,120**	**21,636,748,986**	**79.8**

9.—Principal Statistics of the Manufacturing Industries of the Six Leading Manufacturing Cities, Selected Years, 1939-58

City and Year		Establishments	Employees	Salaries and Wages	Cost of Fuel and Electricity	Cost at Plant of Materials Used	Gross Value of Products[1]
		No.	No.	$	$	$	$
Montreal, Que.	1939	2,501	105,315	114,602,118	7,667,848	254,188,246	483,246,583
	1946	3,785	173,507	291,381,617	14,740,538	602,667,823	1,147,945,303
	1949	4,136	184,779	399,943,526	16,487,474	847,444,669	1,596,713,694
	1953	4,398	193,129	544,284,191	18,428,249	1,067,911,378	2,042,662,785
	1955	4,379	176,998	529,339,811	19,553,134	1,021,717,306	1,963,367,235
	1957	4,268	183,996	611,657,486	23,540,996	1,214,443,559	2,288,258,169
	1958	4,121	173,582	601,773,312	21,742,163	1,189,356,004	2,266,191,996
Toronto, Ont.	1939	2,885	98,702	122,553,435	7,306,351	240,532,281	482,532,331
	1946	3,632	145,556	247,298,288	12,238,707	549,256,912	1,036,939,790
	1949	4,005	158,562	368,510,524	17,003,151	837,148,440	1,579,186,450
	1953	3,781	154,251	478,086,271	18,968,416	980,873,073	1,875,747,249
	1955	3,497	134,235	448,775,761	18,788,747	916,493,539	1,732,099,123
	1957	3,312	132,356	482,758,834	20,936,055	961,000,335	1,832,080,726
	1958	3,185	124,789	485,767,394	20,855,472	973,581,141	1,825,714,816

For footnote, see end of table, p. 680.

9.—Principal Statistics of the Manufacturing Industries of the Six Leading Manufacturing Cities, Selected Years, 1939-58—concluded

City and Year	Establishments	Employees	Salaries and Wages	Cost of Fuel and Electricity	Cost at Plant of Materials Used	Gross Value of Products[1]
	No.	No.	$	$	$	$
Hamilton, Ont.......1939	461	31,512	39,563,423	5,267,577	70,829,034	152,746,340
1946	501	45,951	80,959,432	10,434,888	150,977,835	308,033,098
1949	546	54,665	137,641,333	17,728,214	285,180,403	563,982,920
1953	566	60,451	201,515,979	22,408,131	385,515,852	824,407,315
1955	588	55,202	200,311,361	24,807,502	395,047,070	844,835,085
1957	562	57,095	237,883,530	28,217,591	502,608,132	1,031,430,829
1958	548	50,219	219,874,661	24,757,682	452,298,965	943,304,365
Vancouver, B.C......1939	829	17,957	22,382,192	1,397,159	56,565,511	101,267,243
1946	1,071	31,408	55,960,984	3,075,458	138,045,068	270,165,166
1949	1,225	33,536	78,793,345	4,392,716	204,642,985	358,620,526
1953	1,316	33,822	108,896,725	5,448,266	255,906,780	448,591,543
1955	1,330	34,683	120,488,180	5,757,268	276,666,483	489,181,449
1957	1,280	35,666	138,199,452	6,578,883	305,719,965	540,766,123
1958	1,217	32,765	134,591,149	6,301,610	292,447,555	522,600,098
Windsor, Ont........1939	222	17,729	25,938,890	1,673,417	63,907,106	122,474,320
1946	256	30,889	60,315,436	3,748,979	138,788,813	244,925,148
1949	283	34,591	94,304,627	5,373,123	271,392,923	494,162,203
1953	338	37,514	140,481,193	7,559,592	402,209,586	682,273,319
1955	334	25,654	101,810,378	4,975,650	186,275,443	374,512,418
1957	318	29,377	122,169,670	6,568,182	290,073,160	533,531,623
1958	305	22,295	103,237,036	5,725,545	220,362,294	421,681,449
Winnipeg, Man.......1939	648	17,571	20,717,273	1,491,823	44,873,043	81,024,272
1946	756	26,730	42,354,650	2,625,075	121,531,306	206,381,007
1949	860	28,687	58,604,162	3,166,077	143,827,270	255,006,806
1953	860	28,230	76,008,218	3,266,587	156,860,845	300,186,774
1955	873	26,392	75,281,647	3,541,450	152,575,494	291,084,611
1957	856	27,039	83,809,725	4,069,453	166,092,377	314,229,185
1958	820	25,867	85,034,125	3,683,565	169,747,263	324,232,314

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[1] Net value is derived from gross value by deducting cost of materials, fuel and electricity. In 1952 gross value of products was replaced by selling value of factory shipments; see text on p. 631.

10.—Principal Statistics of the Manufacturing Industries in the Six Leading Metropolitan Areas, 1957 and 1958

Year and Metropolitan Area	Establishments	Employees	Salaries and Wages	Cost of Fuel and Electricity	Cost at Plant of Materials Used	Selling Value of Factory Shipments
	No.	No.	$	$	$	$
1957						
Montreal................	5,120	256,312	895,400,304	63,798,670	2,128,827,485	3,922,951,240
Toronto................	4,765	210,395	783,250,045	35,341,922	1,542,445,150	3,031,304,841
Hamilton................	703	60,997	250,844,563	29,348,933	530,275,129	1,082,274,355
Vancouver................	1,782	56,000	218,584,752	12,786,783	523,033,536	937,850,315
Windsor................	382	31,072	128,934,577	7,020,596	302,854,818	560,122,524
Winnipeg................	1,065	38,760	124,195,210	9,338,527	315,195,938	545,949,521
1958						
Montreal................	4,970	243,352	888,661,516	57,777,260	2,120,992,095	3,933,627,051
Toronto................	4,725	205,253	814,287,382	35,798,441	1,593,968,023	3,103,952,432
Hamilton................	695	54,303	233,588,935	25,959,576	481,748,921	999,232,306
Vancouver................	1,746	52,878	217,676,330	14,459,176	517,097,840	941,502,899
Winnipeg................	1,049	37,314	126,203,759	8,409,546	333,274,999	576,557,849
Windsor................	371	23,683	108,729,150	6,096,954	232,716,430	445,779,732

11.—Statistics of Manufactures of Municipalities, each with Selling Value of Factory Shipments of $5,000,000 or Over and with Three or More Establishments, 1958

NOTE.—Statistics for urban centres with three or more establishments cannot be published when one establishment has 75 p.c. or two establishments 90 p.c. of the total value of shipments.

Province and Municipality	Establishments	Employees	Salaries and Wages	Cost of Fuel and Electricity	Cost at Plant of Materials Used	Selling Value of Factory Shipments
	No.	No.	$	$	$	$
Newfoundland—						
St. John's	99	2,628	7,674,910	622,560	12,762,413	29,298,114
Prince Edward Island—						
Charlottetown	35	662	1,754,189	205,278	9,305,541	12,854,758
Summerside	23	252	614,138	74,214	3,320,939	5,105,951
Nova Scotia—						
Amherst	24	1,135	3,466,203	436,167	5,259,110	12,828,066
Halifax	136	6,041	18,588,848	1,151,510	29,587,842	64,240,036
Lunenburg	15	739	1,965,773	130,455	4,467,823	7,963,459
New Glasgow	30	856	2,581,216	368,651	4,442,828	9,347,876
Sydney	46	5,204	21,608,845	4,068,041	40,127,605	78,714,100
Trenton	8	1,116	4,143,672	455,698	10,806,449	18,249,274
Truro	37	1,046	2,237,873	174,649	4,612,794	9,154,009
Yarmouth	28	858	1,881,732	169,516	4,530,588	8,237,820
New Brunswick—						
Fredericton	39	976	2,455,740	224,327	4,487,440	9,186,891
Lancaster	10	809	2,920,804	778,156	9,355,359	21,085,151
Moncton	62	2,759	9,212,353	728,437	27,975,142	42,647,383
Saint John	90	3,722	11,270,298	1,529,379	43,563,533	70,011,574
Quebec—						
Acton Vale	16	1,309	2,657,481	165,908	9,171,531	14,575,988
Beauharnois	21	1,500	5,943,760	3,621,687	13,349,779	33,430,873
Bedford	11	713	1,922,255	68,772	2,191,452	5,251,726
Berthierville	19	657	1,451,354	156,952	2,751,901	6,071,805
Cap de la Madeleine	44	2,587	7,763,872	1,645,617	26,509,067	49,013,653
Chicoutimi	39	511	1,457,463	113,986	2,512,884	5,453,390
Coaticook	17	936	2,340,398	137,850	3,799,309	7,290,875
Cowansville	12	1,593	4,785,941	394,620	7,263,018	15,111,448
Drummondville	58	5,778	16,458,399	1,601,992	33,947,680	73,969,951
Farnham	20	1,117	3,158,828	219,754	6,225,227	13,300,216
Granby	81	5,286	16,470,853	987,510	41,634,386	77,177,475
Grand'Mère	30	2,229	7,170,696	1,435,613	12,527,389	27,810,136
Hull	48	3,287	12,248,360	2,597,862	30,094,051	55,519,115
Huntingdon	13	562	1,898,585	199,423	5,368,067	8,240,626
Jacques Cartier	28	1,406	4,722,742	321,875	9,549,860	19,449,543
Joliette	56	2,170	6,327,123	690,255	10,980,359	22,947,245
Jonquière	18	519	1,911,328	125,683	2,648,952	7,740,050
Lachine	82	13,025	54,366,494	2,050,783	87,060,986	184,897,434
Lachute	20	372	1,203,283	207,991	3,267,338	5,704,807
LaSalle	48	5,266	21,210,755	1,657,719	67,579,412	134,228,731
L'Assomption	16	698	1,888,062	143,775	4,838,590	7,651,936
Lennoxville	14	422	1,318,512	218,938	3,442,487	7,176,367
Lévis	33	490	1,212,773	87,152	2,707,528	5,057,567
Longueuil	30	3,202	12,682,668	453,030	14,749,864	36,197,991
Louiseville	20	1,267	3,204,875	331,683	5,210,334	10,262,377
Magog	31	2,544	6,673,628	852,071	33,985,471	47,183,767
Marieville	19	529	1,366,124	107,433	6,041,111	8,544,683
Montmagny	42	1,232	3,431,419	244,911	7,460,170	14,394,462
Mount Royal	48	5,777	22,815,306	696,162	68,495,399	119,152,452
Montreal	4,121	173,582	601,773,312	21,742,163	1,189,356,004	2,266,191,996
Montreal East	46	7,219	33,453,676	22,444,850	455,033,665	694,077,733
Montreal North	60	1,226	4,260,802	198,778	10,019,810	16,675,334
Outremont	62	1,458	4,868,725	183,519	11,892,618	22,596,179
Plessisville	26	527	1,339,795	147,285	5,220,219	7,894,884
Pointe aux Trembles	18	713	2,892,946	2,106,215	27,713,840	36,515,078
Princeville	19	669	1,766,277	123,404	7,977,372	11,400,755
Quebec	426	15,469	49,273,032	6,728,435	107,258,265	215,629,286
Richmond	16	699	1,872,020	63,365	3,704,598	7,092,122
St. Hyacinthe	86	3,900	10,133,022	846,299	28,777,537	49,176,022
St. Jean	78	5,517	18,340,713	1,221,987	34,109,274	63,406,296
St. Jérôme	67	3,164	9,003,558	801,879	17,861,130	34,510,933
St. Lambert	26	997	3,098,034	139,053	5,427,453	11,364,622
St. Laurent	95	18,021	80,499,764	2,359,231	103,420,452	254,580,568
Ste. Marie	24	919	2,536,764	272,251	6,389,583	12,061,203
St. Michel	84	1,321	4,270,795	346,632	7,992,735	15,316,550
St. Rémi	14	452	1,150,685	72,976	4,312,154	6,874,993
St. Thérèse	41	1,265	3,521,564	318,655	8,575,527	15,805,032

11.—Statistics of Manufactures of Municipalities, each with Selling Value of Factory Shipments of $5,000,000 or Over and with Three or More Establishments, 1958—continued

Province and Municipality	Establishments	Employees	Salaries and Wages	Cost of Fuel and Electricity	Cost at Plant of Materials Used	Selling Value of Factory Shipments
	No.	No.	$	$	$	$
Quebec—concluded						
Shawinigan	47	5,787	24,816,094	10,526,063	50,731,892	120,642,050
Sherbrooke	118	7,090	20,582,189	1,521,384	43,824,173	86,843,928
Terrebonne	18	699	1,939,899	106,432	3,512,665	6,741,413
Trois Rivières	89	8,384	28,946,242	8,236,667	53,232,483	123,324,439
Valleyfield	44	3,338	10,525,288	1,421,149	22,802,288	51,409,628
Verdun	67	1,532	4,447,387	118,414	6,403,390	14,077,058
Victoriaville	55	2,585	6,457,447	338,294	13,385,968	24,292,650
Warwick	11	427	1,034,337	120,293	2,811,705	5,059,234
Waterloo	20	573	1,605,777	106,277	3,337,960	6,034,912
Westmount	35	1,766	6,375,390	428,458	9,989,994	21,135,574
Ontario—						
Acton	18	934	3,195,031	248,710	7,118,881	12,511,137
Ajax	37	1,701	6,249,640	303,424	15,974,510	26,899,974
Arnprior	19	953	2,950,593	166,267	4,240,983	11,190,764
Aurora	23	1,069	3,751,687	150,144	8,005,124	19,171,273
Barrie	40	1,754	6,482,522	424,778	17,503,522	34,971,636
Belleville	72	3,204	11,772,157	2,168,879	13,942,418	40,004,432
Bowmanville	16	747	2,861,559	223,305	4,933,016	11,303,025
Brampton	43	1,818	6,674,911	495,145	11,242,174	24,947,376
Brantford	173	10,781	38,733,514	2,253,958	72,498,870	144,356,944
Brockville	46	3,215	11,998,721	738,741	40,364,684	70,976,637
Burlington	34	1,189	4,193,633	251,301	8,864,590	18,144,090
Chatham	70	3,423	13,250,043	1,293,810	72,843,761	99,781,801
Cobourg	31	984	3,604,553	238,173	9,366,120	21,811,914
Collingwood	25	1,678	5,357,171	184,714	9,713,904	18,262,818
Cornwall	53	6,197	23,966,579	5,572,322	37,911,129	88,815,443
Dundas	37	1,119	4,015,016	196,981	6,228,319	12,079,549
Dunnville	17	1,247	3,335,983	185,428	9,851,149	16,724,902
Eastview	23	434	1,679,754	111,992	5,250,343	8,826,315
Fort Erie	30	855	3,495,736	146,158	9,638,522	18,214,686
Fort William	70	3,482	14,609,748	4,450,077	37,506,676	70,941,740
Galt	92	7,140	24,712,000	1,013,452	42,251,630	85,888,005
Gananoque	17	771	2,893,093	229,667	5,821,879	10,959,617
Georgetown	24	1,244	4,808,827	280,885	9,303,883	16,644,516
Goderich	18	450	1,427,403	231,989	3,860,184	7,587,549
Grimsby	19	519	1,258,363	77,064	2,954,178	5,229,667
Guelph	113	6,409	23,466,069	1,241,652	44,574,250	87,705,597
Hamilton	548	50,219	219,874,661	24,757,682	452,298,965	943,304,365
Hanover	23	1,027	2,937,950	128,895	5,329,599	9,849,816
Hespeler	15	866	3,005,600	231,199	4,955,174	10,009,440
Ingersoll	29	1,034	3,443,421	584,277	11,860,819	21,433,862
Kingston	75	4,318	16,775,451	1,472,570	27,512,963	54,948,546
Kitchener	196	15,200	54,427,481	2,604,456	122,469,700	232,151,746
Leaside	46	7,586	31,066,216	975,045	57,773,178	106,448,526
Lindsay	36	1,569	4,888,575	421,415	7,765,606	18,891,588
Listowel	13	488	1,299,982	110,210	3,128,008	5,767,471
London	281	15,110	54,927,504	2,821,951	99,818,670	212,874,104
Long Branch	22	978	3,850,717	211,740	9,243,441	19,884,926
Meaford	20	486	1,174,434	97,863	2,434,446	5,017,549
Merritton	18	1,688	7,385,486	1,399,692	16,422,360	30,847,260
Midland	29	1,135	3,342,022	145,795	9,336,349	14,577,035
Milton	15	888	3,627,261	606,601	6,000,355	13,234,595
Mimico	37	864	3,081,645	266,409	5,425,454	11,535,099
Napanee	17	462	1,581,628	166,598	4,032,099	7,285,836
New Liskeard	15	487	1,627,089	94,308	2,649,884	5,095,693
Newmarket	21	1,014	3,418,281	180,198	5,837,221	13,713,356
New Toronto	43	7,372	33,694,221	2,349,025	92,407,378	177,033,340
Niagara Falls	79	4,444	18,095,681	4,531,763	30,071,539	73,434,974
North Bay	29	592	2,122,339	168,951	3,717,994	7,459,712
Oakville	48	1,869	7,338,245	445,614	14,253,830	31,419,863
Orillia	60	2,224	7,005,180	488,644	8,600,629	20,814,168
Ottawa	290	9,968	36,207,930	2,655,268	58,484,898	130,610,070
Owen Sound	50	2,179	6,884,686	326,265	9,112,538	23,176,465
Paris	30	1,079	3,219,710	166,387	5,833,250	11,598,542
Pembroke	28	1,377	4,358,530	180,733	6,160,390	12,075,284
Perth	26	788	2,251,216	134,940	4,434,754	9,642,828
Peterborough	93	9,480	48,463,688	1,498,145	73,803,736	148,137,294
Port Arthur	58	2,664	10,544,263	2,264,178	21,313,627	47,570,230
Preston	45	2,846	9,592,772	348,623	14,092,255	30,153,043
Renfrew	24	655	2,068,554	140,265	3,496,100	6,622,209
St. Catharines	102	6,321	26,532,613	1,342,183	33,129,067	74,554,477

11.—Statistics of Manufactures of Municipalities, each with Selling Value of Factory Shipments of $5,000,000 or Over and with Three or More Establishments, 1958—concluded

Province and Municipality	Establishments	Employees	Salaries and Wages	Cost of Fuel and Electricity	Cost at Plant of Materials Used	Selling Value of Factory Shipments
	No.	No.	$	$	$	$
Ontario—concluded						
St. Mary's	14	570	2,155,200	1,714,988	6,673,720	15,310,571
St. Thomas	53	2,417	8,516,561	427,826	16,445,250	35,606,234
Sarnia	51	7,211	36,608,676	23,915,415	195,774,287	362,595,944
Sault Ste. Marie	48	8,514	41,665,923	7,595,648	82,396,708	163,758,806
Simcoe	27	1,390	5,175,979	534,204	29,139,988	39,172,853
Smith's Falls	30	707	2,155,105	159,250	3,906,761	10,479,700
Stratford	74	3,477	11,776,515	534,031	22,350,750	42,055,057
Strathroy	25	672	1,978,392	89,343	3,780,888	8,375,428
Sudbury	57	1,102	4,282,685	505,579	7,275,444	15,897,456
Swansea	16	820	3,396,190	193,650	7,209,039	14,461,918
Thorold	24	1,527	6,574,715	1,775,028	12,787,814	26,642,761
Tillsonburg	26	971	3,009,427	341,709	20,526,406	25,157,970
Toronto	3,185	124,789	485,767,394	20,855,472	973,581,141	1,825,714,816
Trenton	28	1,716	5,714,560	838,780	11,671,907	26,385,109
Wallaceburg	29	2,227	7,979,414	1,187,367	10,341,914	22,945,847
Waterloo	63	3,128	10,877,326	577,709	20,785,141	59,225,029
Welland	52	2,820	10,141,882	826,317	14,475,824	32,327,611
Weston	53	2,105	8,212,469	460,820	12,276,178	27,599,898
Windsor	305	22,295	103,237,036	5,725,545	220,362,294	421,681,449
Wingham	17	403	1,179,810	102,772	3,176,243	5,710,418
Woodstock	58	3,933	13,750,151	2,231,949	38,934,128	68,400,032
Manitoba—						
Brandon	42	856	3,070,444	403,208	12,527,492	20,009,567
St. Boniface	95	5,093	18,455,210	2,311,969	122,900,966	163,199,514
St. James	55	2,692	9,305,894	356,822	14,202,350	35,561,200
Winnipeg	820	25,867	85,034,125	3,683,565	169,747,263	324,232,314
Saskatchewan—						
Moose Jaw	42	1,361	5,147,424	1,011,029	32,613,355	47,704,668
Prince Albert	33	881	3,239,525	264,298	13,938,667	21,475,351
Regina	147	3,505	13,405,127	2,976,924	52,475,712	100,257,937
Saskatoon	128	3,211	12,093,518	1,203,869	54,735,617	84,189,718
Alberta—						
Calgary	344	10,219	39,664,263	2,662,832	139,426,437	224,998,173
Edmonton	408	12,869	46,254,854	2,344,929	159,165,705	251,653,786
Lethbridge	56	1,266	4,081,113	321,081	9,811,310	21,582,725
Medicine Hat	42	1,075	3,868,653	512,332	15,925,333	26,491,417
Red Deer	28	325	1,077,369	116,497	4,694,256	8,079,059
British Columbia—						
Kelowna	33	896	2,956,369	200,073	5,411,617	10,550,241
New Westminster	105	6,115	24,436,540	1,951,168	62,919,597	116,164,166
North Vancouver	70	2,832	13,014,931	1,428,666	13,259,069	37,086,958
Port Alberni	14	2,426	11,229,167	2,338,240	21,082,031	40,864,633
Port Moody	8	707	2,810,081	223,226	8,469,694	15,078,077
Prince George	51	791	2,845,633	232,430	9,615,869	15,017,724
Vancouver	1,217	32,765	134,591,149	6,301,610	292,447,555	522,600,098
Victoria	183	4,437	17,945,120	915,137	28,016,242	61,970,957

CHAPTER XV.—CAPITAL EXPENDITURES, CONSTRUCTION AND HOUSING*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

This Chapter, in addition to including a special article relating to the significance of construction activity in the economic life of the nation, provides data on the capital expenditures made by all sectors of the Canadian economy on construction and on machinery and equipment, together with summaries of other available statistics for the construction industry. Section 1 describes the purpose of capital expenditures and shows the amounts spent by each of the various industrial or economic sectors. Section 2 brings together a number of summaries of related series on construction activity—value of work performed by type of structure, value of materials used, salaries and wages paid and numbers employed, contracts awarded and building permits issued. Government aid to house-building and construction of dwelling units are covered in Section 3.

THE CONSTRUCTION INDUSTRY IN CANADA†

Construction activity in Canada is completely interwoven with the social fabric of the economy. Its demands are created by all other industries and it serves a widely heterogeneous pattern of economic activity. Manufacturers and commercial interests call upon the construction industry to provide facilities for the housing of equipment and machinery and for the storage of commodities. Transportation service industries call upon it to provide roads, railways, harbours, airfields and telecommunication facilities. The mining industry calls upon it to provide processing plants and townsite developments. In turn, communities call upon it to provide social institutions, housing and other related service facilities. In general, the health of the construction industry is basic to the welfare and progress of the community and, conversely, the progress of the community is basic to the prosperity of the construction industry.

Because of the intimate complexity of construction demands, it is at times difficult to differentiate between construction activity and what may be classed as other types of activity. With the increase of off-site prefabrication and the assembly of building parts in factories or in suppliers' yards and shops, the lines of demarcation between construction activity and goods manufacture and distribution are rather obscure, yet the activities of the latter groups are closely associated with on-site construction activity. Thus, while the measurement of construction activity in its entirety is not possible, the significance of that activity in the economic life of the nation is much greater than is usually realized.

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* Except where otherwise noted, prepared in the Operations Section, Business Finance Division, Dominion Bureau of Statistics.

† Prepared by Wm. J. H. Purcell, Economics Branch, Department of Trade and Commerce, Ottawa.

For instance, the construction industry proper, which employed close to a quarter of a million persons in 1930, in 1959 provided employment for more than half a million and thus was one of the largest single industrial employers in the Canadian economy. When construction carried out directly by other types of business enterprise on their own behalf is considered, together with employment generated by the industries producing construction materials, the significance of construction activity becomes very much greater.

Viewed in relation to the total level of output of goods and services produced by the nation, total construction activity has become even more important. On an average, over the past five years the value of new and repair construction of all types has accounted for about one-fifth of the total Canadian productive effort—a proportion nearly twice as high as found during the depression period of the 1930's. This strong rate of growth in both the level of activity and the relative proportion to total economic activity does not preclude various inherent problems. The most notable of these is the extreme volatility of the industry.

1.—New and Repair Construction as a Percentage of Gross National Expenditure, 1926-59

Year	Percentage of Gross National Expenditure	Year	Percentage of Gross National Expenditure	Year	Percentage of Gross National Expenditure
1926	15.6	1938	13.9	1949	17.9
1927	16.5	1939	13.3	1950	18.2
1928	18.0	1940	12.7	1951	18.2
1929	19.7	1941	13.7	1952	18.5
1930	18.9	1942	12.5	1953	19.3
1931	18.5	1943	12.8	1954	19.5
1932	14.6	1944	10.3	1955	19.6
1933	12.5	1945	10.6	1956	21.1
1934	12.8	1946	13.5	1957	22.1
1935	13.1	1947	15.3	1958	21.8
1936	13.5	1948	16.8	1959	20.6
1937	14.7				

The long-term demand pattern for construction is, of course, influenced by the general level of Canadian economic activity and also by the changing character of the development of Canada's natural resources. As is well known, construction activity goes through wider 'cycles' than most other economic activity, tending to hit lower 'troughs' in times of depression and higher 'peaks' in times of boom. The construction materials industry, being geared to these cycles, fares accordingly. Despite such wide cyclical swings, the industry continues to show a strong long-term expansionary tendency. The rapid rate of population growth, the shift from a rural to a highly organized industrial economy, the growing need for social capital and power and transport facilities, together with the introduction of improved techniques in both construction and material processing have all contributed to the maintenance of a high level of demand in the construction and building materials industries.

Although the construction industry generally is subject to volatile cyclical fluctuations, the varying pattern of construction expenditures greatly influences the welfare of specialized contractors and in turn influences the producers of building materials. Not all share equally the benefits of an accelerated investment program. Emphasis on housing and social capital creates demands for certain types of skills and materials that are not used extensively in office building construction or in the construction of specialized industrial plants. Emphasis on housing stimulates the output of such materials as sewer pipe, heating equipment, siding, insulation, roofing and flooring, brick and tile and many other items that are directly oriented to housing and community construction programs. Similarly, rapid industrial expansion stimulates the production and use of such materials as structural steel, bars and rods, pre-stressed concrete, heavy electric wire and electronic panels. It also follows naturally that the pattern of demand for construction skills and trades fluctuates as the pattern of construction changes.

2.—Expenditures on New and Repair and Maintenance Construction, 1926-60

NOTE.—Actual expenditures 1926–59; preliminary actual 1960.

Year	Housing	Other Building and Construction	Engineering	Total
	$'000,000	$'000,000	$'000,000	$'000,000
1926........	261	371	167	799
1927........	267	452	196	915
1928........	290	547	254	1,091
1929........	303	599	308	1,210
1930........	256	501	324	1,081
1931........	214	396	256	866
1932........	136	271	143	550
1933........	116	216	95	427
1934........	142	242	118	502
1935........	160	255	149	564
1936........	189	299	143	631
1937........	230	350	201	781
1938........	212	346	179	737
1939........	242	354	163	759
1940........	263	461	145	869
1941........	321	615	201	1,137
1942........	310	725	228	1,263
1943........	292	624	366	1,282
1944........	329	603	215	1,147
1945........	382	654	169	1,205
1946........	518	784	305	1,607
1947........	671	943	402	2,016
1948........	830	1,164	577	2,571
1949........	952	1,263	641	2,856
1950........	1,036	1,360	760	3,156
1951........	1,108	1,615	829	3,552
1952........	1,029	1,382	1,788	4,199
1953........	1,558	1,506	1,828	4,892
1954........	1,619	1,481	1,809	4,909
1955........	1,804	1,639	1,933	5,376
1956........	1,902	1,988	2,564	6,454
1957........	1,813	2,073	3,137	7,023
1958........	2,189	1,912	2,991	7,092
1959........	2,183	2,057	2,836	7,076
1960........	1,944	2,068	2,875	6,887

In addition to its cyclical behaviour, the construction industry displays a high level of seasonal activity. Because of the extremes of climate during the winter months, most construction work has been confined traditionally to the longer and warmer summer day and the amount undertaken during the shorter and more severe winter day is rather restricted. The effect of this practice has been the creation of a large construction labour force necessary to satisfy a high seasonal peak of activity. On the other hand, the slowdown in the winter months has generated a high level of seasonal unemployment among construction workers. Thus, one of the paramount objectives of the industry today is to moderate these extreme seasonal fluctuations in employment by developing new techniques of winter construction and by introducing new building materials and designs. The industry, with the co-operation of government agencies and builders' associations, has embarked on a continuing program of research and education with a view to minimizing the decline of activity during the winter. It has already had significant success in certain regions of the country for many types of construction activities.

Organization of the Industry.—In both organization and technology, the construction industry is the reflection of a widely diversified and changeable market. Its development over the past thirty years has been one of continuing adaptation to the instability of economic conditions, to rapidly changing techniques of construction, and to the utilization of new construction materials. The special characteristics of building structures, the variety and variability of construction activity, the extent of government influence and the effect of external economic factors are unique to this industry and have produced a continually changing kaleidoscope of demand patterns. This has at times imposed serious hardships on the industry, hardships and challenges that have been met by the ingenuity and aggressive pioneering of men of foresight and determination. As a

VALUE OF CONSTRUCTION WORK PERFORMED

(New and Repair)

① HOUSING

1952	$1,029,000,000
1954	1,399,900,000
1956	1,830,400,000
1958	2,189,000,000
1960	1,943,700,000
1961	2,044,100,000

② INSTITUTIONAL

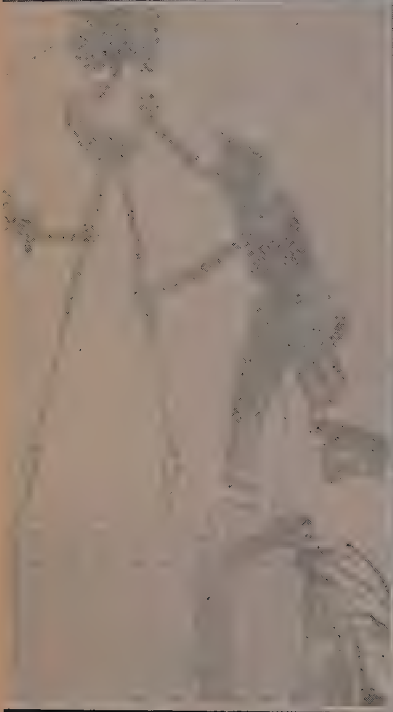
1952	$ 419,738,000
1954	603,176,000
1956	812,485,000
1958	828,485,000
1960	919,135,000
1961	1,032,381,000

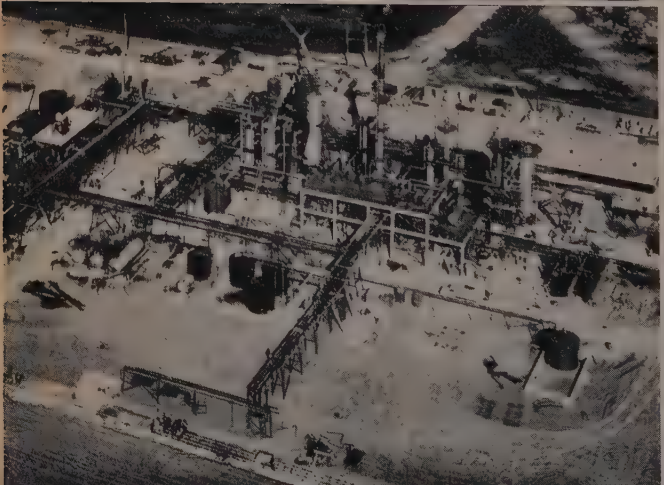
③ ←

INDUSTRIAL AND COMMERCIAL

1952	$ 962,164,000
1954	910,815,000
1956	1,175,371,000
1958	1,084,266,000
1960	1,149,706,000
1961	1,123,547,000

④





① ←

ENGINEERING

1952	$ 330,134,000
1954	503,056,000
1956	876,440,000
1958	1,128,545,000
1960	908,661,000
1961	961,528,000

→

COMMUNITY SERVICES

1952	$ 883,695,000
1954	832,996,000
1956	1,069,622,000
1958	1,150,331,000
1960	1,142,045,000
1961	1,155,144,000

⑥

ROADS AND HIGHWAYS	
1952	$ 573,890,000
1954	473,424,000
1956	618,038,000
1958	711,854,000
1960	825,268,000
1961	814,898,000

ALL CONSTRUCTION	
1952	$4,198,621,000
1954	4,723,367,000
1956	6,382,356,000
1958	7,092,481,000
1960	6,888,515,000
1961	7,131,598,000

① A federal-provincial rental housing project under construction at Halifax, N.S.

(Central Mortgage and Housing Corporation)

② The first building to be constructed for the newly founded York University, Toronto, is scheduled for completion in September 1961.

(York University)

High-rise buildings under construction along Dorchester Boulevard are changing the Montreal skyline.

③ A workman attaches the bracket that will hold a window in place on C-I-L House, a 20-storey building to be ready for occupancy in May 1962.

(Canadian Industries Limited)

④ The Royal Bank of Canada Building, one of the fabulous elements in that vast complex known as Place Ville Marie, will be the largest office structure in the Commonwealth.

(Royal Bank of Canada)

⑤ This chemical plant under construction on the Fraser River near Ladner, B.C., will produce phenol for formaldehyde glues required by the British Columbia plywood industry and for use in the manufacture of plastics and fungicides.

(Dow Chemical of Canada, Limited)

⑥ Little manual labour is required in the finishing of Riverside Drive, Ottawa. The first machine, running on rails, pours the rough-cast cement and is followed by a second machine laying the topping.

(Andrews-Hunt Photography)

⑦ The hydro-power project under construction on the Tobin Rapids-Squaw Rapids reach of the Saskatchewan River, 35 miles northeast of Nipawin, will have a capacity of 276,000 hp. when completed in 1966.

(Saskatchewan Department of Industry and Information)

⑧ (Dominion Steel and Coal Corporation, Limited)

CONSTRUCTION

1952-61

result, a widely diversified group of specialized construction companies has been generated; these companies provide the expert advice and skills essential to the application of efficient construction techniques in their respective fields, which may be oil drilling, pipe-laying, road-building, communications structures, structural steel placement or other type of specialized construction. At the same time, a more general type of organization has developed which has sufficient internal adjustability to permit it to adapt itself to different problems as they arise. The main function of this type of organization is to co-ordinate and administer the whole construction program on large-scale projects and thus achieve maximum efficiency of operations. They, in turn, rely heavily upon the skills of the individual sub-contractor and specialized trade groups.

Along with the accumulation of skills and engineering experience, many highly efficient mechanical aids have been developed. The now common use of such machinery has considerably increased output per man-hour employed but at the same time has necessitated a higher level of capital investment and equipment per dollar of construction output.

Regional Differences.—The shift from a rural to a highly industrialized urban society has, of course, been accompanied by a gravitation of the population toward the major industrial centres of the country and also by the establishment of new urban centres around resource developments. As a result of such concentration, construction activity in conjunction with the suppliers of materials and services has become quite self-sufficient by regions. Throughout the wide expanse of this country, climatic and economic factors vary between regions; thus the nature and character of the construction industry also varies, requiring differing types of services and materials.

It is natural that the general expansion of the construction industry has not been shared equally by all regions of the country. Changing emphases created by a growing economy make for uneven construction demands which are more favourable to some areas than to others. For instance, the development of a large isolated mineral deposit—which has occurred many times in recent years—involves the building of mine facilities, railway transport facilities, water shipping facilities and often the construction of a completely new townsite with its housing requirements and the multitude of service and manufacturing facilities needed to provide the inhabitants with a modern mode of living; all this requires a very large and comprehensive construction program. On the other hand, the stimulation of the fishing industry or the logging industry, while of great importance to a local area, would require less construction and would therefore have a much milder effect on construction activity.

Table **3** suggests the changing emphasis of construction activity in the different regions of Canada. Quebec and Ontario each continue to account for a large proportion of total construction expenditures, although the proportions for the Prairie Provinces and British Columbia have increased significantly over the period shown. In contrast, the Atlantic Provinces have accounted for a decreased percentage of the total.

3.—Average Percentage Distribution of Construction Expenditures, by Region, Certain Periods during 1934-60

Region	1934-35	1941-45	1951-55	1956-60
	p.c.	p.c.	p.c.	p.c.
Atlantic Provinces	10.8	9.5	7.0	7.8
Quebec	25.2	29.2	24.8	24.5
Ontario	46.5	37.9	35.3	40.6
Prairie Provinces	11.6	12.3	21.6	16.2
British Columbia	5.9	11.1	11.2	11.0
Canada (excl. the Territories)	**100.0**	**100.0**	**100.0**	**100.0**

Construction Materials.—The demand for building materials is satisfied by the efforts of a multitude of processing industries. Most secondary manufacturing industries contribute in some way to the supply of processed or semi-processed commodities required by the construction industry. The basic material for all wood products, wallboards, insulating and other papers is contributed by the lumber industry; asphalt, explosives, plastics, paints and many other products are contributed by the chemical industry; steel rails, sheets, nails and other metal commodities are contributed by the iron and steel industry; and rock, stone and cement are supplied by the quarrying industry. These are but a few of the industries concerned with the provision of materials directly related to construction activity.

New techniques of construction and new products are substituting to varying degrees for traditional methods and materials. Reinforced concrete which replaced much of the need for steel and timber is now being partially replaced by pre-stressed concrete. Stainless steel and aluminum sheets are becoming more and more common as facing for office buildings, often replacing brick and stone. Off-site prefabrication techniques have increased the volume of work being done by the manufacturer and have necessitated the use of other new materials. Thus, certain building materials have experienced much greater growth than others, as is indicated by the figures of Table 4.

4.—Indexes of Building Materials Production, Alternate Years, 1935-60

(1949=100)

Item	1935	1937	1939	1941	1943	1945	1947
Roofing paper	16.5	24.6	25.7	39.8	42.5	63.7	82.9
Saw and planing mills	41.0	52.3	52.8	72.1	68.6	72.8	96.4
Sash, door and planing mills	24.5	33.0	33.4	59.2	62.3	54.9	75.7
Hardwood flooring	41.2	57.7	54.1	78.4	102.3	83.1	95.9
Sawmills	54.7	68.8	69.5	87.2	78.6	79.3	101.4
Veneer and plywood	..	..	..	..	..	68.7	106.3
Bridge-building and structural steel	22.4	44.9	34.3	123.7	195.4	105.4	89.1
Heating and cooking apparatus	29.8	44.2	41.3	62.1	63.5	68.8	86.0
Wire and wire products	39.0	51.1	55.7	88.6	83.2	84.9	98.1
Cement	21.7	38.3	35.6	52.8	50.0	48.7	76.0
Clay products—domestic and sand-lime brick	31.0	45.7	51.1	68.0	55.0	65.5	91.2
Concrete products	4.2	14.5	16.3	23.9	21.5	35.0	62.0
Gypsum products	24.6	35.8	39.0	59.9	64.8	63.4	86.8
Lime							
Glass and glass products	31.7	46.1	42.3	63.4	76.2	79.4	96.6
Quarrying and sand pits	35.2	42.7	46.2	49.9	40.4	44.0	85.6
Paints, varnishes and lacquers	31.3	45.8	43.9	68.4	75.6	77.8	88.9
	1949	1951	1953	1955	1957	1959[1]	1960[1]
Roofing paper	100.0	100.8	104.3	115.2	100.9	115.0	98.2
Saw and planing mills	100.0	119.3	129.6	143.9	128.4	137.0	141.8
Sash, door and planing mills	100.0	117.2	126.3	144.7	130.1	137.7	122.8
Hardwood flooring							
Sawmills	100.0	116.9	124.7	133.5	114.6	122.6	128.5
Veneer and plywood	100.0	144.0	178.3	226.2	235.7	252.3	267.1
Bridge-building and structural steel	100.0	124.5	147.5	169.8	241.1	198.6	148.6
Heating and cooking apparatus	100.0	97.4	135.2	154.9	183.5	244.0	191.3
Wire and wire products	100.0	134.9	120.5	148.0	144.6	182.2	159.8
Cement	100.0	106.6	139.5	156.1	221.1	221.9	204.9
Clay products—domestic and sand-lime brick	100.0	120.7	130.8	146.6	145.5	170.2	152.8
Concrete products	100.0	130.7	182.4	317.6	356.9	533.5	511.9
Gypsum products	100.0	112.6	126.6	170.0	153.7	186.1	155.1
Lime	100.0	120.6	119.0	126.4	133.1	161.3	145.1
Glass and glass products	100.0	117.7	148.5	158.2	168.6	198.1	187.9
Quarrying and sand pits	100.0	192.9	154.3	204.3	264.2	317.7	301.2
Paints, varnishes and lacquers	100.0	120.4	133.8	142.6	138.5	154.5	157.8

[1] Subject to revision.

Canadian facilities for the production of most structural materials have expanded in recent years and, at the same time, many new plants have been established to produce materials previously imported. For instance, during the past ten years facilities have been constructed for the manufacture of both large- and small-diameter pipe to be used for oil and gas transmission. Large-size wide-flange steel beams and plate, aluminum extrusions and plastic sheathing are now among Canadian products. The output of bottled gas, a major requirement in the provision of refrigeration service and in construction, has increased considerably. The development of the petrochemical industry has made available cheap basic raw materials for the production of other construction products such as floor and acoustic tile, new insulating materials and paint solutions. Titanium-based pigments for paint manufacture are being recovered as by-products, using raw materials from titanium slag piles and waste petroleum refinery gases. Additional capacity for the production of titanium-based pigments is being installed and will be operative in 1963.

Because of continually increasing demand, cement production capacity has more than doubled. The rapid expansion of this industry has led to its diversification and output integration. Ready-mix plants are now common in most major communities and are a vital link in the quality control and efficient application of cement in large-scale production projects. New techniques of application and use have led to an expansion of secondary product manufacture such as blocks, brick, pipe and pre-stressed beams and slabs. Recent developments suggest the greater use of cement for soil stabilization purposes which will assist in the building of good roadbeds.

At present, the Canadian construction materials industry is relatively self-sufficient, except for certain items that are unique in their application for architectural and aesthetic needs.

Outlook for the Construction Industry.—Forecasts of construction expenditures for the next twenty-five years indicate a growing emphasis on engineering construction, realizing the increasing need for roads, electric power, research development and fully manufactured products of many kinds. Of significance in recent years has been the acceptance of contracyclical federal construction programs. Such programs have been oriented largely to requirements of the community for services in the form of housing and schools, hospitals and other institutions. This factor, in conjunction with aggressive business investment programs, will assist in restraining and stretching out construction booms and will stimulate construction actively in less prosperous times. Such stabilization of the construction cycle should, to a great extent, create greater efficiency and less fluctuation of activity within the building industry and, by so doing, also effect more constant growth of the multitudinous construction materials industries.

Section 1.—Capital Expenditures on Construction and on Machinery and Equipment

Capital expenditures of all sectors of the economy amounted to $8,200,000,000 in 1960, a reduction of 2.6 p.c. from the 1959 total of $8,417,000,000. The decline was wholly accounted for by a smaller construction program—$5,487,000,000 being spent compared with $5,709,000,000 in the previous year. Purchases of machinery and equipment totalling $2,713,000,000 in 1960 were unchanged from the level of 1959. Total capital expenditures increased throughout most of the decade since 1950 and reached a record level in 1957. Since 1958, capital spending in Canada has remained at a high and fairly stable level, the variations being within a relatively narrow range. The 1960 capital program accounted for almost 23 p.c. of Canada's gross national product; thus it may be said that 23 p.c. of the gross national product was devoted to expanding, modernizing and renewing the nation's productive facilities.

5.—Capital Expenditures on Construction and on Machinery and Equipment, 1951-60

NOTE.—Actual expenditures 1951-59; preliminary actual 1960.

Year	Capital Expenditures			Total Expenditure as Percentage of Gross National Product
	Construction	Machinery and Equipment	Total	
	$'000,000	$'000,000	$'000,000	p.c.
1951	2,871	1,868	4,739	22.4
1952	3,434	2,057	5,491	22.9
1953	3,756	2,220	5,976	23.9
1954	3,737	1,984	5,721	23.0
1955	4,169	2,075	6,244	22.9[r]
1956	5,273	2,761	8,034	26.3
1957	5,784	2,933	8,717	27.3[r]
1958	5,830	2,534	8,364	25.4
1959[r]	5,709	2,708	8,417	24.1
1960	5,487	2,713	8,200	22.8

Looking at the 1960 program by type, there was less emphasis on construction and more on purchases of machinery and equipment than in 1959. Similarly, there was less construction of new houses and more non-residential construction as shown in Table 6.

6.—Capital Expenditures and Percentage Distribution, by Type, 1958-60

NOTE.—Actual expenditures 1958 and 1959; preliminary actual 1960.

Type	Capital Expenditures			Distribution		
	1958	1959	1960	1958	1959	1960
	$'000,000	$'000,000	$'000,000	p.c.	p.c.	p.c.
Construction	**5,830**	**5,709**	**5,487**	**69.7**	**67.8**	**66.9**
Housing	1,782	1,752	1,489	21.3	20.8	18.2
Non-residential	4,048	3,957	3,998	48.4	47.0	48.7
Machinery and Equipment	**2,534**	**2,708**	**2,713**	**30.3**	**32.2**	**33.1**
Totals	**8,364**	**8,417**	**8,200**	**100.0**	**100.0**	**100.0**

While total investment has shown no distinct trend in recent years, this has not been true of some of the major sectors of investment. From 1957 to 1958, a shift from business capital spending to social capital (housing, institutions and government installations) was clearly noticeable. This change in composition was also experienced, though to a lesser degree, from 1959 to 1960 despite the important reduction in expenditures on housing, and there are indications of a continuance of the trend during 1961.

The substantial decline in outlays for housing in 1960 coupled with the reduction in expenditures on utilities was mainly responsible for the over-all decrease in capital investment in that year. However, these declines were partially offset by gains principally in expenditures on resource-based industries, manufacturing industries, institutions and government departments. The steep decline in residential construction was partly caused by a restricted supply of mortgage funds in the first part of the year, particularly in lending under the National Housing Act. Later in the year when the supply of funds increased, general market conditions became the limiting factor in house-building activity. During 1960, about 109,000 new housing units were started and about 124,000 units were completed. Toward the end of the year the rate of housing starts improved substantially.

Capital expenditures in the primary industries were higher in 1960 than in the previous year. The figures for the agricultural sector reflect continued mechanization of farm activities. Higher capital outlays on the Quebec–Labrador iron ore projects and on petroleum and gas development in the western provinces were mainly responsible for the increase in the mining industry.

While expenditures for the construction of new manufacturing plants were lower than in 1959, manufacturers increased their purchases of machinery and equipment sufficiently to bring the total investment in the manufacturing industries to a higher level. The impetus came mainly from larger undertakings by the pulp and paper companies, the chemical industry, and the makers of iron and steel. The completion of major railway lines serving new mining areas and lesser requirements for new railway rolling-stock were the factors behind the substantial drop in capital outlays in the railway transport industry. On the other hand, increases in the telephone industry, in the construction of natural gas pipelines, and in municipal waterworks systems tended to counterbalance the decline in the railway industry, so that total capital expenditures in the utilities sector were not substantially lower than in the previous year.

While several important projects were completed during 1960, initial expenditures were made late in the year on new projects which will involve substantial capital outlays. A start was made on the Canadian portion of a new gas pipeline being built for the purpose of exporting natural gas to the United States and referred to as the Alberta–California project. The harnessing of the Manicouagan River in northern Quebec was also started in 1960; construction of the power facilities is expected to take many years and involve large capital outlays. In recent years, there has been a large amount of spending on the erection of office buildings and shopping centres and the trend continued in 1960. Also, the improved financial situation of hospitals and universities has permitted greater expansion of their facilities and outlays in this sector reached a record level in 1960.

7.—Summary of Capital and Repair Expenditures, by Economic Sector, 1958-60

Note.—Actual expenditures 1958 and 1959; preliminary actual 1960.

(Millions of dollars)

Type of Enterprise and Year		Capital			Repair			Capital and Repair		
		Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
Agriculture and fishing	1958	101	364	465	73	133	206	174	497	671
	1959	109	430	539	79	143	222	188	573	761
	1960	107	441	548	78	146	224	185	587	772
Forestry	1958	19	14	33	16	25	41	35	39	74
	1959	21	27	48	15	25	40	36	52	88
	1960	25	27	52	18	27	45	43	54	97
Mining, quarrying and oil wells	1958	242	100	342	24	75	99	266	175	441
	1959	250	92	342	30	78	108	280	170	450
	1960	298	84	382	23	75	98	321	159	480
Manufacturing	1958	398	697	1,095	110	462	572	508	1,159	1,667
	1959	374	770	1,144	125	537	662	499	1,307	1,806
	1960	350	842	1,192	118	542	660	468	1,384	1,852
Utilities	1958	1,405	748	2,153	250	400	650	1,655	1,148	2,803
	1959	1,118	724	1,842	275	428	703	1,393	1,152	2,545
	1960	1,110	649	1,759	270	426	696	1,380	1,075	2,455
Construction	1958	16	141	157	4	118	122	20	259	279
	1959	16	129	145	7	140	147	23	269	292
	1960	16	121	137	7	140	147	23	261	284
Housing	1958	1,782	—	1,782	407	—	407	2,189	—	2,189
	1959	1,752	—	1,752	431	—	431	2,183	—	2,183
	1960	1,489	—	1,489	455	—	455	1,944	—	1,944
Trade (wholesale and retail)	1958	195	161	356	35	33	68	230	194	424
	1959	167	196	363	44	45	89	211	241	452
	1960	158	190	348	38	44	82	196	234	430
Finance, insurance and real estate	1958	150	30	180	12	6	18	162	36	198
	1959	225	42	267	12	6	18	237	48	285
	1960	201	49	250	15	7	22	216	56	272

7.—Summary of Capital and Repair Expenditures, by Economic Sector, 1958-60—concluded

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
Commercial services.........1958	51	118	169	16	44	60	67	162	229
1959	70	133	203	16	45	61	86	178	264
1960	58	132	190	13	45	58	71	177	248
Institutional services.........1958	457	57	514	49	8	57	506	65	571
1959	479	57	536	49	10	59	528	67	595
1960	508	68	576	59	12	71	567	80	647
Government departments....1958	1,014	104	1,118	266	48	314	1,280	152	1,432
1959	1,128	108	1,236	284	57	341	1,412	165	1,577
1960	1,167	110	1,277	306	54	360	1,473	164	1,637
Totals....................1958	**5,830**	**2,534**	**8,364**	**1,262**	**1,352**	**2,614**	**7,092**	**3,886**	**10,978**
1959	**5,709**	**2,708**	**8,417**	**1,367**	**1,514**	**2,881**	**7,076**	**4,222**	**11,298**
1960	**5,487**	**2,713**	**8,200**	**1,400**	**1,518**	**2,918**	**6,887**	**4,231**	**11,118**

Details of some of the above economic sectors are given in Table 8. The value of construction work performed, together with statistics of contracts awarded and building permits issued in recent years, is covered in Section 2 of this Chapter. Housing is treated separately in Section 3.

8.—Capital and Repair Expenditures for Certain Economic Sectors, 1958-60

NOTE.—Actual expenditures 1958 and 1959; preliminary actual 1960.

(Millions of dollars)

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
					MANUFACTURING				
Foods and beverages........1958	40.5	85.7	126.2	13.9	51.4	65.3	54.4	137.1	191.5
1959	45.4	87.4	132.8	14.7	54.8	69.5	60.1	142.2	202.3
1960	53.2	92.3	145.5	14.3	50.9	65.2	67.5	143.2	210.7
Tobacco and tobacco products...................1958	4.1	7.5	11.6	1.1	2.8	3.9	5.2	10.3	15.5
1959	3.3	4.9	8.2	1.2	2.8	4.0	4.5	7.7	12.2
1960	1.5	4.5	6.0	0.9	2.9	3.8	2.4	7.4	9.8
Rubber products.............1958	2.0	6.4	8.4	1.0	7.5	8.5	3.0	13.9	16.9
1959	3.5	9.7	13.2	1.2	8.3	9.5	4.7	18.0	22.7
1960	6.0	17.1	23.1	1.0	8.0	9.0	7.0	25.1	32.1
Leather products............1958	0.5	1.9	2.4	0.6	2.3	2.9	1.1	4.2	5.3
1959	0.8	2.2	3.0	0.7	2.5	3.2	1.5	4.7	6.2
1960	1.2	2.3	3.5	0.4	2.1	2.5	1.6	4.4	6.0
Textile products.............1958	2.6	20.7	23.3	2.8	16.0	18.8	5.4	36.7	42.1
1959	4.7	18.1	22.8	3.1	16.8	19.9	7.8	34.9	42.7
1960	6.1	20.6	26.7	3.8	17.8	21.6	9.9	38.4	48.3
Clothing....................1958	0.7	7.5	8.2	1.1	3.9	5.0	1.8	11.4	13.2
1959	1.6	10.9	12.5	1.3	4.3	5.6	2.9	15.2	18.1
1960	2.0	8.9	10.9	1.4	3.8	5.2	3.4	12.7	16.1
Wood products..............1958	8.8	22.1	30.9	5.9	24.7	30.6	14.7	46.8	61.5
1959	15.3	35.4	50.7	6.8	29.7	36.5	22.1	65.1	87.2
1960	14.3	29.9	44.2	6.3	36.8	43.1	20.6	66.7	87.3

8.—Capital and Repair Expenditures for Certain Economic Sectors, 1958-60—continued

Type of Enterprise and Year		Capital			Repair			Capital and Repair		
		Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
		MANUFACTURING—concluded								
Paper products	1958	25.5	101.7	127.2	7.2	85.7	92.9	32.7	187.4	220.1
	1959	24.2	102.4	126.6	9.9	93.8	103.7	34.1	196.2	230.3
	1960	29.9	136.7	166.6	8.6	92.2	100.8	38.5	228.9	267.4
Printing, publishing and allied industries	1958	13.4	20.1	33.5	2.0	6.3	8.3	15.4	26.4	41.8
	1959	11.8	28.4	40.2	2.0	6.7	8.7	13.8	35.1	48.9
	1960	8.1	19.8	27.9	2.4	6.1	8.5	10.5	25.9	36.4
Iron and steel products	1958	35.7	90.7	126.4	14.4	83.3	97.7	50.1	174.0	224.1
	1959	40.9	124.8	165.7	16.0	121.7	137.7	56.9	246.5	303.4
	1960	37.1	159.1	196.2	14.2	116.6	130.8	51.3	275.7	327.0
Transportation equipment	1958	16.6	37.7	54.3	10.4	30.7	41.1	27.0	68.4	95.4
	1959	20.5	45.2	65.7	10.2	33.5	43.7	30.7	78.7	109.4
	1960	16.0	27.9	43.9	9.1	29.8	38.9	25.1	57.7	82.8
Non-ferrous metal products	1958	43.7	52.2	95.9	9.6	49.3	58.9	53.3	101.5	154.8
	1959	27.8	32.8	60.6	12.2	51.7	63.9	40.0	84.5	124.5
	1960	22.8	42.6	65.4	13.3	62.1	75.4	36.1	104.7	140.8
Electrical apparatus and supplies	1958	7.3	21.8	29.1	2.9	14.0	16.9	10.2	35.8	46.0
	1959	8.5	21.6	30.1	3.4	15.4	18.8	11.9	37.0	48.9
	1960	6.9	25.4	32.3	3.0	15.6	18.6	9.9	41.0	50.9
Non-metallic mineral products	1958	14.4	25.9	40.3	2.9	32.2	35.1	17.3	58.1	75.4
	1959	25.9	47.8	73.7	4.3	39.5	43.8	30.2	87.3	117.5
	1960	16.9	32.0	48.9	3.7	38.8	42.5	20.6	70.8	91.4
Products of petroleum and coal	1958	136.0	7.3	143.3	23.4	6.2	29.6	159.4	13.5	172.9
	1959	109.2	12.5	121.7	26.6	6.3	32.9	135.8	18.8	154.6
	1960	87.8	8.4	96.2	24.0	5.8	29.8	111.8	14.2	126.0
Chemical products	1958	43.1	73.5	116.6	9.2	41.9	51.1	52.3	115.4	167.7
	1959	24.5	56.5	81.0	10.1	45.0	55.1	34.6	101.5	136.1
	1960	33.9	76.4	110.3	9.6	47.9	57.5	43.5	124.3	167.8
Miscellaneous	1958	2.7	9.3	12.0	1.4	3.9	5.3	4.1	13.2	17.3
	1959	6.0	10.5	16.5	1.5	4.5	6.0	7.5	15.0	22.5
	1960	6.0	12.0	18.0	1.9	4.7	6.6	7.9	16.7	24.6
Capital items charged to operating expenses	1958	—	105.4	105.4	—	—	—	—	105.4	105.4
	1959	—	118.8	118.8	—	—	—	—	118.8	118.8
	1960	—	125.7	125.7	—	—	—	—	125.7	125.7
Totals, Manufacturing	**1958**	**397.6**	**697.4**	**1,095.0**	**109.8**	**462.1**	**571.9**	**507.4**	**1,159.5**	**1,666.9**
	1959	**373.9**	**769.9**	**1,143.8**	**125.2**	**537.3**	**662.5**	**499.1**	**1,307.2**	**1,806.3**
	1960	**349.7**	**841.6**	**1,191.3**	**117.9**	**541.9**	**659.8**	**467.6**	**1,383.5**	**1,851.1**
		UTILITIES								
Electric power	1958	496.3	183.9	680.2	40.2	27.0	67.2	536.5	210.9	747.4
	1959	387.3	186.4	573.7	43.1	26.1	69.2	430.4	212.5	642.9
	1960	402.2	142.0	544.2	49.2	26.3	75.5	451.4	168.3	619.7
Gas distribution	1958	74.1	5.2	79.3	3.8	2.4	6.2	77.9	7.6	85.5
	1959	77.0	12.8	89.8	6.7	2.0	8.7	83.7	14.8	98.5
	1960	59.4	7.1	66.5	5.2	1.5	6.7	64.6	8.6	73.2
Railway transport and telegraphs	1958	182.6	175.6	358.2	145.5	180.3	325.8	328.1	355.9	684.0
	1959	234.8	139.3	374.1	160.0	181.5	341.5	394.8	320.8	715.6
	1960	230.1	83.6	313.7	147.7	171.2	318.9	377.8	254.8	632.6
Urban transit	1958	3.4	13.5	16.9	4.5	17.8	22.3	7.9	31.3	39.2
	1959	4.9	12.8	17.7	4.3	18.1	22.4	9.2	30.9	40.1
	1960	19.8	6.3	26.1	4.2	18.4	22.6	24.0	24.7	48.7

8.—Capital and Repair Expenditures for Certain Economic Sectors, 1958-60—continued

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
	UTILITIES—concluded								
Water transport and services. 1958	132.5	35.5	168.0	3.4	17.2	20.6	135.9	52.7	188.6
1959	56.0	40.8	96.8	6.4	17.0	23.4	62.4	57.8	120.2
1960	37.0	47.9	84.9	5.7	18.0	23.7	42.7	65.9	108.6
Motor transport............. 1958	1.9	31.1	33.0	0.8	36.5	37.3	2.7	67.6	70.3
1959	4.8	51.6	56.4	1.6	49.9	51.5	6.4	101.5	107.9
1960	3.5	35.3	38.8	1.4	46.6	48.0	4.9	81.9	86.8
Grain elevators............. 1958	10.0	1.6	11.6	5.1	2.2	7.3	15.1	3.8	18.9
1959	17.2	6.7	23.9	5.4	2.0	7.4	22.6	8.7	31.3
1960	13.5	2.3	15.8	5.3	2.2	7.5	18.8	4.5	23.3
Telephones.................. 1958	126.7	202.9	329.6	26.1	78.1	104.2	152.8	281.0	433.8
1959	126.9	187.2	314.1	26.1	87.9	114.0	153.0	275.1	428.1
1960	137.3	195.7	333.0	28.9	93.3	122.2	166.2	289.0	455.2
Broadcasting................ 1958	2.2	7.1	9.3	0.4	2.4	2.8	2.6	9.5	12.1
1959	4.0	9.0	13.0	0.7	2.4	3.1	4.7	11.4	16.1
1960	7.7	13.1	20.8	0.5	2.8	3.3	8.2	15.9	24.1
Municipal waterworks........ 1958	75.9	4.2	80.1	14.7	1.6	16.3	90.6	5.8	96.4
1959	87.4	4.4	91.8	15.4	1.5	16.9	102.8	5.9	108.7
1960	76.6	5.7	82.3	16.7	1.4	18.1	93.3	7.1	100.4
Other utilities[1]............... 1958	299.1	72.4	371.5	5.6	34.2	39.8	304.7	106.6	411.3
1959	118.1	58.2	176.3	5.3	39.5	44.8	123.4	97.7	221.1
1960	122.9	95.8	218.7	5.4	43.8	49.2	128.3	139.6	267.9
Capital items charged to operating expenses......... 1958	—	14.7	14.7	—	—	—	—	14.7	14.7
1959	—	14.8	14.8	—	—	—	—	14.8	14.8
1960	—	13.8	13.8	—	—	—	—	13.8	13.8
Totals, Utilities.......... **1958**	**1,404.7**	**747.7**	**2,152.4**	**250.1**	**399.7**	**649.8**	**1,654.8**	**1,147.4**	**2,802.2**
1959	**1,118.4**	**724.0**	**1,842.4**	**275.0**	**427.9**	**702.9**	**1,393.4**	**1,151.9**	**2,545.3**
1960	**1,110.0**	**648.6**	**1,758.6**	**270.2**	**425.5**	**695.7**	**1,380.2**	**1,074.1**	**2,454.3**
	TRADE								
Wholesale................... 1958	23.4	22.6	46.0	4.4	6.5	10.9	27.8	29.1	56.9
1959	24.8	30.3	55.1	6.0	8.3	14.3	30.8	38.6	69.4
1960	28.8	24.8	53.6	3.9	6.7	10.6	32.7	31.5	64.2
Chain stores................ 1958	43.1	31.6	74.7	4.9	4.1	9.0	48.0	35.7	83.7
1959	33.0	36.6	69.6	8.0	5.0	13.0	41.0	41.6	82.6
1960	28.8	39.3	68.1	5.2	4.3	9.5	34.0	43.6	77.6
Independent stores.......... 1958	75.4	56.5	131.9	12.1	9.3	21.4	87.5	65.8	153.3
1959	46.1	69.9	116.0	14.9	17.9	32.8	61.0	87.8	148.8
1960	42.6	64.7	107.3	15.5	18.6	34.1	58.1	83.3	141.4
Department stores........... 1958	13.2	7.1	20.3	4.7	3.0	7.7	17.9	10.1	28.0
1959	13.9	10.0	23.9	5.3	3.0	8.3	19.2	13.0	32.2
1960	15.8	13.2	29.0	4.1	3.5	7.6	19.9	16.7	36.6
Automotive trade............ 1958	39.8	28.5	68.3	8.7	10.2	18.9	48.5	38.7	87.2
1959	49.0	31.8	80.8	9.9	10.3	20.2	58.9	42.1	101.0
1960	42.2	30.9	73.1	9.5	10.7	20.2	51.7	41.6	93.3
Capital items charged to operating expenses......... 1958	—	14.4	14.4	—	—	—	—	14.4	14.4
1959	—	17.8	17.8	—	—	—	—	17.8	17.8
1960	—	17.3	17.3	—	—	—	—	17.3	17.3
Totals, Trade............ **1958**	**194.9**	**160.7**	**355.6**	**34.8**	**33.1**	**67.9**	**229.7**	**193.8**	**423.5**
1959	**166.8**	**196.4**	**363.2**	**44.1**	**44.5**	**88.6**	**210.9**	**240.9**	**451.8**
1960	**158.2**	**190.2**	**348.4**	**38.2**	**43.8**	**82.0**	**196.4**	**234.0**	**430.4**

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[1] Includes air transport, warehousing, oil and gas pipeline, and toll highways and bridges.

8.—Capital and Repair Expenditures for Certain Economic Sectors, 1958-60—concluded

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
	INSTITUTIONS								
Churches 1958	55.0	3.4	58.4	7.9	0.4	8.3	62.9	3.8	66.7
1959	54.6	3.0	57.6	7.9	0.5	8.4	62.5	3.5	66.0
1960	52.4	2.8	55.2	7.2	0.8	8.0	59.6	3.6	63.2
Universities 1958	55.7	7.6	63.3	5.0	0.3	5.3	60.7	7.9	68.6
1959	73.2	8.3	81.5	4.3	0.4	4.7	77.5	8.7	86.2
1960	76.3	12.7	89.0	5.0	0.7	5.7	81.3	13.4	94.7
Schools 1958	201.9	20.8	222.7	21.6	3.4	25.0	223.5	24.2	247.7
1959	213.5	21.6	235.1	18.8	3.6	22.4	232.3	25.2	257.5
1960	243.2	25.8	269.0	28.8	5.3	34.1	272.0	31.1	303.1
Hospitals 1958	136.1	25.4	161.5	13.8	3.9	17.7	149.9	29.3	179.2
1959	128.1	23.8	151.9	17.3	5.0	22.3	145.4	28.8	174.2
1960	127.1	26.3	153.4	16.8	5.1	21.9	143.9	31.4	175.3
Other institutional services 1958	8.6	0.2	8.8	0.9	0.1	1.0	9.5	0.3	9.8
1959	9.5	0.7	10.2	0.9	0.2	1.1	10.4	0.9	11.3
1960	9.4	0.4	9.8	1.0	0.1	1.1	10.4	0.5	10.9
Totals, Institutions 1958	**457.3**	**57.4**	**514.7**	**49.2**	**8.1**	**57.3**	**506.5**	**65.5**	**572.0**
1959	**478.9**	**57.4**	**536.3**	**49.2**	**9.7**	**58.9**	**528.1**	**67.1**	**595.2**
1960	**508.4**	**68.0**	**576.4**	**58.8**	**12.0**	**70.8**	**567.2**	**80.0**	**647.2**

A summary of the capital expenditures in each province for the years 1958-60 is given in Table 9. Such expenditures represent gross additions to the capital stocks of the province and are a reflection of economic activity in the area, but the actual production of these assets may generate its major employment and income-giving effects in other regions. For example, the spending of millions of dollars on oil refineries and pipelines in Western Canada means activity in the steel industries of Ontario as well as construction activity in the western provinces.

9.—Capital and Repair Expenditures, by Province, 1958-60

NOTE.—Actual expenditures 1958 and 1959; preliminary actual 1960.

(Millions of dollars)

Province and Year	Capital			Repair			Capital and Repair		
	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
Newfoundland 1958	80	27	107	16	13	29	96	40	136
1959	84	31	115	21	15	36	105	46	151
1960	118	32	150	24	20	44	142	52	194
Prince Edward Island 1958	16	14	30	4	5	9	20	19	39
1959	25	12	37	5	5	10	30	17	47
1960	23	11	34	5	5	10	28	16	44
Nova Scotia 1958	120	65	185	40	34	74	160	99	259
1959	161	65	226	48	40	88	209	105	314
1960	158	65	223	50	41	91	208	106	314
New Brunswick 1958	132	50	182	34	31	65	166	81	247
1959	137	66	203	37	35	72	174	101	275
1960	127	60	187	44	34	78	171	94	265
Quebec 1958	1,437	617	2,054	295	346	641	1,732	963	2,695
1959	1,460	634	2,094	312	354	666	1,772	988	2,760
1960	1,313	647	1,960	331	362	693	1,644	1,009	2,653

9.—Capital and Repair Expenditures, by Province, 1958-60—concluded

Province and Year	Capital			Repair			Capital and Repair		
	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
Ontario.....1958	2,144	960	3,104	454	522	976	2,598	1,482	4,080
1959	1,904	996	2,900	488	600	1,088	2,392	1,596	3,988
1960	1,851	985	2,836	489	581	1,070	2,340	1,566	3,906
Manitoba.....1958	275	134	409	70	71	141	345	205	550
1959	315	169	484	83	84	167	398	253	651
1960	337	176	513	85	83	168	422	259	681
Saskatchewan.....1958	307	170	477	76	70	146	383	240	623
1959	273	194	467	84	82	166	357	276	633
1960	289	175	464	80	82	162	369	257	626
Alberta.....1958	655	235	890	131	107	238	786	342	1,128
1959	676	271	947	143	127	270	819	398	1,217
1960	678	278	956	141	126	267	819	404	1,223
British Columbia[1].....1958	663	262	925	141	154	295	804	416	1,220
1959	674	270	944	146	172	318	820	442	1,262
1960	593	284	877	151	184	335	744	468	1,212
Canada[2].....1958	**5,829**	**2,534**	**8,363**	**1,261**	**1,353**	**2,614**	**7,090**	**3,887**	**10,977**
1959	**5,709**	**2,708**	**8,417**	**1,367**	**1,514**	**2,881**	**7,076**	**4,222**	**11,298**
1960	**5,487**	**2,713**	**8,200**	**1,400**	**1,518**	**2,918**	**6,887**	**4,231**	**11,118**

[1] Includes the Yukon and Northwest Territories. [2] Slight differences in totals from those shown in Table 7 are caused by rounding of figures.

Section 2.—Construction Statistics

Subsection 1.—Value of Construction Work Performed

Statistics of the construction industry are based largely on information received at the same time and from the same sources as the data on capital expenditures which appear in Section 1.* The data represent the estimated total value of all new and repair construction performed by contractors; labour forces of utility, manufacturing, mining and logging firms; and by government departments, home-owner builders and other persons or firms not primarily engaged in the construction industry.

Canada's construction program for 1960 is estimated at $6,889,000,000, slightly below the 1959 total. Repair construction is estimated to be about $33,000,000 higher than in 1959, and the value of new construction lower by about $222,000,000.

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* An explanation of sources and methods is given in DBS annual report *Construction in Canada* (Catalogue No. 64-201).

10.—Value of New and Repair Construction Work Performed, 1951-60

NOTE.—Actual expenditures 1951-59; preliminary actual 1960.

Year	New	Repair	Total	Total Construction as Percentage of Gross National Product
	$'000,000	$'000,000	$'000,000	p.c.
1951	2,871	987	3,858	18.2
1952	3,434	1,010	4,444	18.5
1953	3,756	1,070	4,826	19.3
1954	3,737	1,105	4,842	19.5
1955	4,167	1,141	5,308	19.6
1956	5,272	1,182	6,454	21.1 r
1957	5,785	1,238	7,023	22.0 r
1958	5,831	1,261	7,092	21.6 r
1959 r	5,710	1,367	7,077	20.3
1960	5,489	1,400	6,889	19.2

Table **11**, which compares contract construction with other construction, shows that contractors account for from 72 p.c. to 76 p.c. of the work each year.

11.—Value of Construction Work Performed, by Contractors and Others, 1957-60

NOTE.—Actual expenditures 1957-59; preliminary actual 1960.

(Millions of dollars)

Item	1957	1958	1959r	1960
Contract Construction	**5,321**	**5,441**	**5,269**	**4,949**
New	4,770	4,844	4,685	4,353
Repair	551	597	584	596
Other Construction[1]	**1,702**	**1,651**	**1,808**	**1,940**
New	1,015	987	1,025	1,136
Repair	687	664	783	804
Totals, Construction	**7,023**	**7,092**	**7,077**	**6,889**
New	**5,785**	**5,831**	**5,710**	**5,489**
Repair	**1,238**	**1,261**	**1,367**	**1,400**

[1] Work done by the labour forces of utility, manufacturing, mining and logging firms and by government departments, home-owner builders and other persons or firms not primarily engaged in the construction industry.

12.—Value of Construction Work Performed, by Principal Type, 1957-60

NOTE.—Actual expenditures 1957-59; preliminary actual 1960.

(Millions of dollars)

Type of Construction	1957		1958		1959r		1960	
	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total
Building Construction	**3,886**	**55.3**	**4,102**	**57.8**	**4,240**	**59.9**	**4,013**	**58.3**
Residential	1,813	25.8	2,189	30.9	2,183	30.9	1,944	28.3
Industrial	611	8.7	396	5.5	416	5.9	438	6.4
Commercial	656	9.3	689	9.7	759	10.7	712	10.3
Institutional	519	7.4	550	7.8	569	8.0	613	8.9
Other	287	4.1	278	3.9	313	4.4	306	4.4
Engineering Construction	**3,137**	**44.7**	**2,990**	**42.2**	**2,837**	**40.1**	**2,876**	**41.7**
Marine	158	2.2	155	2.2	134	1.9	102	1.5
Road, highway and aerodrome	709	10.1	712	10.0	791	11.1	825	11.8
Waterworks and sewage systems	200	2.8	198	2.8	226	3.2	219	3.2
Dams and irrigation	86	1.2	50	0.7	60	0.8	74	1.1
Electric power	508	7.2	501	7.1	395	5.6	397	5.8
Railway, telephone and telegraph	405	5.8	401	5.7	458	6.5	453	6.6
Gas and oil facilities	741	10.7	650	9.2	464	6.6	475	6.9
Other	330	4.7	323	4.5	309	4.4	331	4.8
Totals, All Construction	**7,023**	**100.0**	**7,092**	**100.0**	**7,077**	**100.0**	**6,889**	**100.0**

Recent shifts within the program of construction are shown in Table **13.**

13.—Dollar Change in Value of Construction Work Performed, by Type of Structure, 1958 to 1959, and 1959 to 1960

Type of Structure	Change 1958 to 1959	Change 1959 to 1960
	$'000,000	$'000,000
Building Construction		
Residential	**−6**	**−239**
Dwellings—single, double, duplex and apartment	−6	−239
Industrial	**20**	**22**
Factories, plants, workshops, food canneries	27	2
Mine and mine mill buildings	−6	22
Railway stations, offices, roadway buildings	1	−3
Railway shops, engine houses, water and fuel stations	−2	1
Commercial	**70**	**−47**
Warehouses, storehouses, refrigerated storage, etc.	7	4
Grain elevators	1	−7
Hotels, clubs, restaurants, cafeterias, tourist cabins	11	−11
Office buildings	23	19
Stores, retail and wholesale	−2	−27
Garages and service stations	6	−7
Theatres, arenas, amusement and recreational buildings	28	−18
Laundries and dry-cleaning establishments	−3	−1
Institutional	**19**	**44**
Schools and other educational buildings	2	56
Churches and other religious buildings	11	−3
Hospitals, sanatoria, clinics, first-aid stations, etc.	−4	−1
Other institutional buildings	10	−8
Other Building	**35**	**−7**
Farm buildings (excluding dwellings)	11	−2
Broadcasting, radio and television, relay and booster stations, telephone exchanges	1	14
Aircraft hangars	20	−11
Passenger terminals, bus, boat or air	−1	−1
Armouries, barracks, drill halls, etc.	−2	−1
Bunkhouses, dormitories, camp cookeries and camps	5	−3
Miscellaneous	1	−3
Totals, Building Construction	**138**	**−228**
Engineering Construction		
Marine	**−21**	**−32**
Docks, wharves, piers, breakwaters	1	7
Retaining walls, embankments, riprapping	1	—
Canals and waterways	−32	−2
Dredging and pile driving	2	−30
Dykes	2	−1
Logging booms	—	—
Other	6	−6
Road, Highway and Aerodrome	**79**	**34**
Hard surfaced or paved streets, highways, parking lots, etc.	−26	94
Gravel or stone streets, highways, roads, parking lots, etc.	84	−58
Engineering Construction—concluded		
Road, Highway and Aerodrome—concluded		
Dirt, clay or other streets, roads, parking lots, etc.	1	14
Grading, scraping, oiling, filling	10	−18
Sidewalks, paths	−1	4
Aerodromes, landing fields, runways, tarmac	12	−2
Waterworks and Sewage Systems	**28**	**−7**
Tile drains, drainage ditches, storm sewers	−7	—
Water mains, hydrants and services	11	−5
Sewage systems and connections	21	−3
Pumping stations, water	7	1
Water storage tanks	−4	—
Dams and Irrigation	**10**	**14**
Dams and reservoirs	10	14
Irrigation and land reclamation projects	—	−1
Electric Power	**−106**	**2**
Electric power generating plants, including water conveying and controlling structures	−68	5
Electric transformer stations	−8	−6
Power transmission and distribution lines, trolley wires	−33	5
Street lighting	2	−1
Railway, Telephone and Telegraph	**56**	**−5**
Railway tracks and roadbed	22	−17
Signals and interlockers	6	—
Telegraph and telephone lines, underground and marine cables	28	11
Gas and Oil Facilities	**−186**	**11**
Gas mains and services	16	−18
Pumping stations, oil	−2	2
Pumping stations, gas	−9	17
Oil storage tanks	2	1
Gas storage tanks	−2	10
Oil pipelines	−1	24
Gas pipelines	−171	−21
Oil wells	7	−3
Gas wells	3	23
Oil refinery—processing units	−19	−20
Natural gas cleaning plants	−11	−1
Other Engineering	**−14**	**21**
Bridges, trestles, culverts, overpasses, viaducts	−5	25
Tunnels and subways	−10	−1
Incinerators	1	−1
Park systems, landscaping, sodding, etc.	—	−1
Swimming pools, tennis courts, outdoor recreation facilities	2	1
Mine shafts and other below-surface workings	−2	−4
Fences, snowsheds, signs, guardrails	3	−2
Miscellaneous engineering construction	−3	4
Totals, Engineering Construction	**−153**	**39**
Totals, All Construction	**−15**	**−189**

Table **14** gives estimates of total expenditures in Canada on each type of construction for which information is available. It contains the detailed data from which Tables **12** and **13** are derived.

14.—Value of Construction Work Performed, by Type of Structure, 1959 and 1960

NOTE.—Actual expenditures 1959; preliminary actual 1960.

Type of Structure	1959			1960		
	New	Repair	Total	New	Repair	Total
	$'000	$'000	$'000	$'000	$'000	$'000
Building Construction						
Residential	**1,752,000**	**431,000**	**2,183,000**	**1,488,700**	**455,000**	**1,943,700**
Dwellings—single, double, duplex and apartment	1,752,000	431,000	2,183,000	1,488,700	455,000	1,943,700
Industrial	**296,888**	**118,926**	**415,814**	**324,436**	**113,595**	**438,031**
Factories, plants, workshops, food canneries	252,508	92,184	344,692	259,041	87,973	347,014
Mine and mine mill buildings	24,219	5,852	30,071	44,829	7,433	52,262
Railway stations, offices, roadway buildings	13,113	12,537	25,650	11,522	10,971	22,493
Railway shops, engine houses, water and fuel stations	7,048	8,353	15,401	9,044	7,218	16,262
Commercial	**640,148**	**118,917**	**759,065**	**607,275**	**104,400**	**711,675**
Warehouses, storehouses, refrigerated storage, etc.	67,568	13,383	80,951	72,785	12,328	85,113
Grain elevators	21,063	6,266	27,329	14,044	6,700	20,744
Hotels, clubs, restaurants, cafeterias, tourist cabins	46,088	15,034	61,122	38,608	11,203	49,811
Office buildings	250,252	36,884	287,136	272,424	33,482	305,906
Stores, retail and wholesale	165,627	29,436	195,063	140,253	27,877	168,130
Garages and service stations	43,708	9,758	53,466	37,690	8,501	46,191
Theatres, arenas, amusement and recreational buildings	44,888	7,188	52,076	30,852	3,534	34,386
Laundries and dry-cleaning establishments	954	968	1,922	619	775	1,394
Institutional	**510,633**	**58,476**	**569,109**	**546,753**	**66,240**	**612,993**
Schools and other educational buildings	285,651	22,010	307,661	328,046	35,676	363,722
Churches and other religious buildings	56,292	8,129	64,421	54,039	7,336	61,375
Hospitals, sanatoria, clinics, first-aid stations, etc.	134,707	18,350	153,057	133,841	18,525	152,366
Other institutional buildings	33,983	9,987	43,970	30,827	4,703	35,530
Other Building	**214,068**	**99,003**	**313,071**	**208,237**	**97,905**	**306,142**
Farm buildings (excluding dwellings)	100,927	71,432	172,359	99,870	70,040	169,910
Broadcasting, radio and television, relay and booster stations, telephone exchanges	39,981	1,992	41,973	53,584	2,174	55,758
Aeroplane hangars	24,035	2,317	26,352	12,425	2,479	14,904
Passenger terminals, bus, boat or air	11,052	424	11,476	10,374	575	10,949
Armouries, barracks, drill halls, etc.	8,564	13,612	22,176	7,706	13,474	21,180
Bunkhouses, dormitories, camp cookeries, bush depots and camps	16,448	5,006	21,454	13,812	4,882	18,694
Miscellaneous	13,061	4,220	17,281	10,466	4,281	14,747
Totals, Building Construction	**3,413,737**	**826,322**	**4,240,059**	**3,175,401**	**837,140**	**4,012,541**
Engineering Construction						
Marine	**118,390**	**16,070**	**134,460**	**87,255**	**15,203**	**102,458**
Docks, wharves, piers, breakwaters	54,181	7,494	61,675	61,351	6,978	68,329
Retaining walls, embankments, riprapping	2,513	467	2,980	2,210	425	2,635
Canals and waterways	3,995	389	4,384	1,736	1,013	2,749
Dredging and pile driving	45,345	6,045	51,390	16,525	5,359	21,884
Dykes	2,941	283	3,224	1,920	274	2,194
Logging booms	449	1,003	1,452	607	803	1,410
Other	8,966	389	9,355	2,906	351	3,257

14.—Value of Construction Work Performed, by Type of Structure, 1959 and 1960—concluded

Type of Structure	1959			1960		
	New	Repair	Total	New	Repair	Total
	$'000	$'000	$'000	$'000	$'000	$'000
Engineering Construction —concluded						
Road, Highway and Aerodrome	**611,027**	**180,032**	**791,059**	**619,893**	**205,375**	**825,268**
Hard surfaced or paved streets, highways, parking lots, etc.	330,446	67,795	398,241	390,912	101,726	492,638
Gravel or stone streets, highways, roads, parking lots, etc.	168,439	85,273	253,712	119,376	76,238	195,614
Dirt, clay or other streets, roads, parking lots, etc.	29,620	19,338	48,958	43,193	19,283	62,476
Grading, scraping, oiling, filling	27,206	2,795	30,001	8,767	2,755	11,522
Sidewalks, paths	14,972	3,530	18,502	18,948	4,050	22,998
Aerodromes, landing fields, runways, tarmac	40,344	1,301	41,645	38,697	1,323	40,020
Waterworks and Sewage	**194,625**	**31,082**	**225,707**	**183,981**	**35,023**	**219,004**
Tile drains, drainage ditches, storm sewers	9,105	4,824	13,929	7,756	6,542	14,298
Water mains, hydrants and services	67,967	15,169	83,136	63,000	15,011	78,011
Sewage systems and connections	103,746	8,928	112,674	99,752	10,140	109,892
Pumping stations, water	11,897	1,986	13,883	11,622	3,187	14,809
Water storage tanks	1,910	175	2,085	1,851	143	1,994
Dams and Irrigation	**52,976**	**7,035**	**60,011**	**66,394**	**7,186**	**73,580**
Dams and reservoirs	43,264	2,429	45,693	57,276	2,663	59,939
Irrigation and land reclamation projects	9,712	4,606	14,318	9,118	4,523	13,641
Electric Power	**346,360**	**48,469**	**394,829**	**341,341**	**55,503**	**396,844**
Electric power generating plants, including water conveying and controlling structures	151,221	10,531	161,752	149,582	16,791	166,373
Electric transformer stations	38,725	7,123	45,848	33,129	6,578	39,707
Power transmission and distribution lines, trolley wires	145,837	25,815	171,652	148,567	27,603	176,170
Street lighting	10,577	5,000	15,577	10,063	4,531	14,594
Railway, Telephone and Telegraph	**298,895**	**158,930**	**457,825**	**298,668**	**153,949**	**452,617**
Railway tracks and roadbed	167,542	114,796	282,338	159,369	106,432	265,801
Signals and interlockers	6,332	6,507	12,839	6,580	6,713	13,293
Telegraph and telephone lines, underground and marine cables	125,021	37,627	162,648	132,719	40,804	173,523
Gas and Oil Facilities	**414,280**	**49,854**	**464,134**	**435,096**	**40,364**	**475,460**
Gas mains and services	72,771	5,939	78,710	56,208	4,175	60,383
Pumping stations, oil	2,253	1,015	3,268	3,581	1,327	4,908
Pumping stations, gas	15,574	295	15,869	32,144	481	32,625
Oil storage tanks	21,546	2,072	23,618	21,930	2,357	24,287
Gas storage tanks	1,594	73	1,667	11,481	87	11,568
Oil pipelines	17,079	1,571	18,650	40,704	1,858	42,562
Gas pipelines	37,319	829	38,148	16,066	736	16,802
Oil wells	124,731	10,232	134,963	127,048	4,838	131,886
Gas wells	30,596	1,209	31,805	53,037	1,468	54,505
Oil refinery—processing units	67,715	24,950	92,665	51,125	21,410	72,535
Natural gas cleaning plants	23,102	1,669	24,771	21,772	1,627	23,399
Other Engineering	**260,342**	**48,957**	**309,299**	**280,837**	**49,906**	**330,743**
Bridges, trestles, culverts, overpasses, viaducts	157,771	25,339	183,110	184,257	24,352	208,609
Tunnels and subways	26,712	117	26,829	25,909	271	26,180
Incinerators	1,276	1,673	2,949	1,663	277	1,940
Park systems, landscaping, sodding, etc.	6,359	2,741	9,100	5,474	2,874	8,348
Swimming pools, tennis courts, outdoor recreation facilities	4,123	1,016	5,139	4,429	1,601	6,030
Mine shafts and other below surface workings	30,208	3,229	33,437	25,714	3,349	29,063
Fences, snowsheds, signs, guard rails	11,165	8,893	20,058	9,979	8,050	18,029
Miscellaneous	22,728	5,949	28,677	23,412	9,132	32,544
Totals, Engineering Construction	**2,296,895**	**540,429**	**2,837,324**	**2,313,465**	**562,509**	**2,875,974**
Totals, All Construction	**5,710,632**	**1,366,751**	**7,077,383**	**5,488,866**	**1,399,649**	**6,888,515**

Principal statistics of the construction industry are shown by province and for contractors, utilities, governments and others in Table **15**. The statistics given for Canada as a whole may be considered as relatively accurate but those for individual provinces and by class of builder are approximations only. All estimates given for cost of materials used are based on ratios of this item to total value of work performed, derived from annual surveys of construction work and applied to the total value-of-work figures. Estimates of labour content are similarly based but, in addition, are adjusted to include working owners and partners and their withdrawals. Although the ratios were calculated in some detail by type of industry, still further refinements are required. There are also some difficulties in obtaining the precise location of projects undertaken or to be undertaken by large companies operating in a number of provinces. However, if used with these qualifications in mind, the table provides useful estimates.

15.—Labour Content, Cost of Materials and Value of Work Performed in Construction, by Province and by Employer, 1957-60

NOTE.—Actual expenditures 1957-59; preliminary actual 1960.

Province and Year		Labour Content		Cost of Materials Used	Value of Work Performed
		Number	Value		
			$'000	$'000	$'000
Province					
Newfoundland	1957	9,875	32,377	43,113	90,393
	1958	9,226	30,999	41,504	95,682
	1959	11,382	38,881	43,363	105,065
	1960	15,287	53,103	59,086	141,910
Prince Edward Island	1957	1,769	5,512	7,299	17,095
	1958	2,070	5,842	9,664	20,498
	1959	2,845	7,715	15,647	29,355
	1960	2,731	7,592	14,599	27,453
Nova Scotia	1957	20,087	59,954	76,580	164,878
	1958	19,446	57,766	72,854	159,690
	1959	22,994	73,232	96,223	209,163
	1960	22,810	73,768	95,619	208,190
New Brunswick	1957	16,836	52,082	68,353	143,958
	1958	16,644	53,135	87,468	165,880
	1959	16,421	57,030	86,020	175,003
	1960	16,387	58,017	83,355	171,155
Quebec	1957	146,727	528,953	836,203	1,661,552
	1958	144,405	537,707	890,149	1,732,647
	1959	142,154	567,179	894,940	1,772,322
	1960	131,748	533,642	830,423	1,644,279
Ontario	1957	207,945	847,896	1,197,947	2,507,011
	1958	214,006	896,629	1,203,999	2,598,625
	1959	195,433	844,800	1,130,533	2,392,095
	1960	187,823	830,384	1,105,644	2,340,307
Manitoba	1957	27,246	100,496	160,366	327,306
	1958	29,495	112,424	163,746	345,293
	1959	32,211	127,322	201,946	397,769
	1960	33,884	135,920	218,151	422,002
Saskatchewan	1957	27,773	107,446	157,370	353,560
	1958	28,959	114,656	192,193	383,344
	1959	29,186	116,681	171,020	357,717
	1960	29,756	122,341	172,605	369,831
Alberta	1957	57,866	223,460	292,052	707,005
	1958	57,141	229,400	355,157	787,336
	1959	58,931	248,251	367,511	818,597
	1960	57,721	248,228	364,022	819,829
British Columbia	1957	74,931	351,520	470,403	1,050,300
	1958	60,600	276,877	356,093	803,486
	1959	60,355	297,123	360,051	820,297
	1960	54,544	272,620	321,498	743,559
Totals	**1957**	**591,055**	**2,309,696**	**3,309,686**	**7,023,058**
	1958	**581,992**	**2,315,435**	**3,372,827**	**7,092,481**
	1959	**571,912**	**2,378,214**	**3,367,254**	**7,077,383**
	1960	**552,691**	**2,335,615**	**3,265,002**	**6,888,515**

15.—Labour Content, Cost of Materials and Value of Work Performed in Construction, by Province and by Employer, 1957-60—concluded

Employer and Year	Labour Content		Cost of Materials Used	Value of Work Performed
	Number	Value		
		$'000	$'000	$'000
Employer				
Contractors.....1957	397,618	1,634,932	2,523,244	5,321,378
1958	393,854	1,655,812	2,606,012	5,441,352
1959	383,825	1,650,000	2,531,105	5,269,521
1960	355,689	1,555,509	2,367,292	4,949,285
Utilities.....1957	77,947	296,918	396,881	775,261
1958	72,694	284,921	411,438	774,336
1959	66,564	303,082	395,103	779,355
1960	70,972	328,833	429,957	843,960
Governments.....1957	59,823	180,697	129,445	396,325
1958	65,806	200,102	113,079	398,070
1959	63,339	203,585	140,417	432,582
1960	65,515	213,703	153,429	462,934
Others.....1957	55,667	197,149	260,116	530,094
1958	49,638	174,600	242,298	478,723
1959	58,184	221,547	300,629	595,925
1960	60,515	237,570	314,324	632,336

Subsection 2.—Contracts Awarded and Building Permits Issued

In this Subsection statistics are given of work actually in sight either as contracts awarded or as building permits. These figures are related to those of work performed during the year only so far as the work thus provided for is completed and duly reported in the capital expenditure surveys. Further, values of contracts awarded, and especially of building permits, are estimates (more often under-estimates) of work to be done.

16.—Value of Construction Contracts Awarded, 1925-60

(Source: *Hugh C. MacLean Building Reports*)

Year	Value of Construction Contracts	Year	Value of Construction Contracts	Year	Value of Construction Contracts
	$		$		$
1925	297,973,000	1937	224,056,700	1949[1]	1,143,547,300
1926	372,947,900	1938	187,277,900	1950	1,525,764,700
1927	418,951,600	1939	187,178,500	1951	2,295,499,200
1928	472,032,600	1940	346,009,800	1952	1,812,177,600
1929	576,651,800	1941	393,991,300	1953	2,017,060,700
1930	456,999,600	1942	281,594,100	1954	2,154,959,200
1931	315,482,000	1943	206,103,900	1955	3,183,592,000
1932	132,872,400	1944	291,961,800	1956	3,426,905,500
1933	97,289,800	1945	409,032,700	1957	2,894,168,100
1934	125,811,500	1946	663,355,100	1958	3,593,709,200
1935	160,305,000	1947	718,137,100	1959	3,219,073,300
1936	162,588,000	1948	954,082,400	1960	3,053,749,500

[1] Newfoundland included from Apr. 1, 1949.

17.—Value of Construction Contracts Awarded, by Province and Type of Construction, 1957-60

(Source: *Hugh C. MacLean Building Reports*)

Province or Type of Construction	1957	1958	1959	1960
	$	$	$	$
Newfoundland	34,572,000	35,448,500	62,317,600	70,055,900
Prince Edward Island	5,941,700	10,156,200	9,999,600	12,217,100
Nova Scotia	54,310,200	105,047,700	109,519,000	132,899,300
New Brunswick	55,612,500	141,119,900	70,195,000	52,466,300
Quebec	703,724,800	1,042,854,900	913,558,400	722,926,800
Ontario	1,312,420,300	1,489,593,500	1,262,306,000	1,325,881,400
Manitoba	186,583,100	124,936,300	117,779,600	142,199,900
Saskatchewan	81,310,200	117,024,800	116,656,500	116,067,400
Alberta	179,230,000	257,745,400	274,654,400	222,018,600
British Columbia	280,463,300	269,782,000	282,087,200	257,016,800
Totals	**2,894,168,100**	**3,593,709,200**	**3,219,073,300**	**3,053,749,500**
Residential	**877,710,400**	**1,413,219,900**	**1,112,670,700**	**769,771,600**
Apartments	192,748,900	344,517,800	274,302,800	214,955,100
Residences	684,961,500	1,068,702,100	838,367,900	554,816,500
Business	**795,683,900**	**1,125,394,400**	**1,068,818,100**	**1,118,646,500**
Churches	40,685,200	48,624,100	43,713,700	49,504,100
Public garages	23,120,900	22,011,700	24,296,100	15,559,700
Hospitals	72,138,200	107,918,500	102,286,100	181,423,300
Hotels and clubs	55,548,300	72,590,700	83,154,600	51,209,100
Office buildings	130,124,600	230,816,500	161,494,800	128,891,600
Public buildings	92,490,400	139,151,400	98,373,800	140,901,800
Schools	232,539,500	252,131,000	303,325,500	316,932,600
Stores	62,614,600	160,094,100	130,686,100	136,356,200
Theatres	958,500	10,406,400	439,000	1,894,100
Warehouses	85,463,700	81,650,000	121,048,400	95,974,000
Industrial	**398,378,200**	**248,764,000**	**261,023,100**	**286,326,000**
Engineering	**822,395,600**	**806,330,900**	**776,561,400**	**879,005,400**
Bridges	96,531,700	69,360,100	101,381,400	119,669,400
Marine	96,968,800	61,649,200	50,042,600	48,513,200
Sewerage and waterworks	94,506,500	131,365,000	129,246,200	137,599,100
Roads and streets	287,061,400	261,771,600	266,932,300	215,838,600
Power and communications	104,665,600	82,664,700	127,363,100	296,970,400
Miscellaneous	142,661,600	199,520,300	101,595,800	60,414,700

Building Permits.—The estimated value of proposed construction as indicated by building permits issued in 204 municipalities in 1960 amounted to $1,382,147,000 as compared with $1,636,995,000 in 1959.

18.—Estimated Value of Proposed Construction as Indicated by Building Permits Issued in 204 Municipalities, 1959 and 1960

Province and Municipality	1959	1960	Province and Municipality	1959	1960
	$'000	$'000		$'000	$'000
Prince Edward Island—			**Nova Scotia—concluded**		
Charlottetown	1,083	1,731	Sydney Mines	334	8
			Truro	1,003	3,334
Nova Scotia—			Yarmouth	522	1,731
Amherst	501	3,216			
Bridgewater	455	199	**New Brunswick—**		
Dartmouth	3,276	3,130	Campbellton	1,359	244
Glace Bay	1,090	264	Chatham	152	168
Halifax	18,770	14,229	Dalhousie	332	365
Liverpool	135	121	Fredericton	6,108	3,113
New Glasgow	472	769	Moncton	7,959	10,609
New Waterford	259	1,503	Newcastle	1,820	833
North Sydney	535	389	Saint John	5,279	3,242
Sydney	12	2,035	St. Stephen	197	68

18.—Estimated Value of Proposed Construction as Indicated by Building Permits Issued in 204 Municipalities, 1959 and 1960—continued

Province and Municipality	1959	1960
	$'000	$'000
Quebec—		
Alma	294	—
Cap de la Madeleine	2,740	2,814
Chicoutimi	7,011	2,738
Coaticook	318	241
Drummondville	760	244
Granby	4,454	5,506
Grand'Mère	782	1,115
Hampstead	1,024	1,286
Hull	4,089	4,244
Iberville	732	660
Joliette	1,568	1,325
Jonquière	4,408	2,309
Lachine	5,908	7,871
Laprairie	891	466
La Tuque	1,165	2,141
Lévis	5,157	1,215
Longueuil	2,723	2,686
Mégantic	1,984	489
Montreal (Maisonneuve)	209,190	154,261
Montreal East	1,789	2,279
Montreal North	12,087	6,116
Montreal West	1,814	617
Mount Royal	7,503	3,715
Noranda	1,503	1,287
Outremont	2,256	1,049
Pointe aux Trembles	4,496	3,107
Pointe Claire	11,059	5,631
Quebec	11,055	17,012
Rimouski	1,884	3,111
Rivière du Loup	2,074	1,060
Rouyn	2,096	1,613
Ste. Agathe des Monts	545	261
Ste. Anne de Bellevue	646	381
St. Hyacinthe	2,427	2,134
St. Jean	2,794	3,700
St. Jérôme	3,623	2,547
St. Lambert	2,464	2,103
St. Laurent	13,302	15,420
Shawinigan	1,822	1,670
Sherbrooke	8,717	10,051
Sorel	991	606
Trois Rivières	9,157	9,408
Val d'Or	573	533
Valleyfield	1,855	2,858
Verdun	3,271	5,637
Westmount	6,482	5,921
Ontario—		
Amherstburg	654	337
Barrie	6,795	4,345
Belleville	6,204	2,634
Bowmanville	766	1,497
Bracebridge	776	267
Brampton	9,063	10,628
Brantford	4,336	6,333
Brockville	4,097	2,173
Burlington	13,521	10,780
Campbellford	460	138
Chatham	4,844	4,207
Cobourg	2,057	980
Cochrane	530	645
Collingwood	820	737
Cornwall	5,725	8,806
Dundas	1,039	2,730
Eastview	3,044	3,578
Etobicoke Twp.	68,979	53,088
Forest Hill	3,721	4,614
Fort Erie	1,827	669
Fort Frances	759	1,049
Fort William	10,420	4,977
Galt	4,086	3,079
Ontario—concluded		
Gananoque	819	374
Gloucester Twp.	4,508	4,201
Goderich	1,376	616
Guelph	8,698	5,555
Haileybury	418	332
Hamilton	46,682	53,335
Hanover	460	374
Hawkesbury	562	582
Huntsville	445	471
Ingersoll	528	1,002
Kapuskasing	935	1,194
Kenora	399	1,022
Kingston	7,374	7,868
Kirkland Lake (Teck Twp.)	962	486
Kitchener	16,978	2,861
Leamington	1,494	896
Leaside	5,609	5,323
Lindsay	2,511	841
Listowel	421	1,322
London	14,385	12,254
Long Branch	657	1,274
Mimico	4,569	3,142
Napanee	237	207
Nepean Twp.	8,954	16,709
New Liskeard	289	299
Newmarket	1,458	746
New Toronto	1,418	573
Niagara Falls	2,294	1,634
North Bay	5,336	3,316
North York Twp.	96,681	82,348
Oakville	1,204	4,001
Orillia	1,720	2,339
Oshawa	13,553	12,262
Ottawa	74,487	55,647
Owen Sound	2,435	2,416
Paris	542	365
Parry Sound	242	367
Pembroke	1,743	2,942
Perth	926	498
Peterborough	7,875	5,180
Petrolia	607	257
Port Arthur	8,946	14,063
Port Colborne	1,324	2,271
Preston	2,561	1,066
Renfrew	721	984
Riverside	4,050	2,226
St. Catharines	5,090	4,630
St. Mary's	201	492
St. Thomas	1,723	1,417
Sarnia	11,164	8,391
Sault Ste. Marie	9,263	7,201
Scarborough Twp.	74,988	53,177
Simcoe	661	1,035
Smith's Falls	811	678
Stratford	2,499	3,267
Sudbury	5,393	6,097
Swansea	1,224	259
Tillsonburg	1,307	649
Timmins	3,178	3,423
Toronto	106,579	107,472
Trenton	1,516	2,124
Wallaceburg	854	560
Waterloo	4,905	7,668
Welland	3,010	935
Weston	694	2,121
Whitby	3,017	1,913
Windsor	5,393	11,486
Woodstock	3,049	1,807
York Twp.	5,861	12,443
York East Twp.	11,608	6,741

18.—Estimated Value of Proposed Construction as Indicated by Building Permits Issued in 204 Municipalities, 1959 and 1960—concluded

Province and Municipality	1959	1960
	$'000	$'000
Manitoba—		
Brandon	4,747	5,594
Brooklands	683	138
Dauphin	1,106	2,151
North Kildonan	4,935	5,310
Portage la Prairie	1,980	2,902
St. Boniface	7,725	7,429
Selkirk	1,894	1,671
The Pas	683	728
Transcona	5,149	4,567
Winnipeg	30,485	36,379
Saskatchewan—		
Biggar	275	76
Estevan	1,569	335
Melville	672	25
Moose Jaw	6,635	3,779
North Battleford	2,163	1,138
Prince Albert	4,220	4,896
Regina	35,055	24,436
Saskatoon	34,205	26,374
Swift Current	2,244	2,527
Weyburn	1,969	1,678
Yorkton	2,966	1,776
Alberta—		
Calgary	98,398	68,924
Drumheller	970	871
Alberta—concluded		
Edmonton	70,842	56,100
Lethbridge	9,082	5,084
Medicine Hat	7,557	4,960
British Columbia—		
Chilliwack	945	560
Cranbrook	1,058	847
Fernie	246	48
Kamloops	1,935	780
Kelowna	1,541	1,503
Nanaimo	2,256	4,113
Nelson	794	945
New Westminster	4,237	4,721
North Vancouver	7,096	1,414
Prince George	5,087	4,198
Prince Rupert	1,636	1,087
Revelstoke	249	158
Rossland	210	127
Trail	1,039	1,053
Vancouver	56,381	36,520
Vernon	2,985	1,312
Victoria	7,051	7,856
Totals, 204 Municipalities	**1,636,995**	**1,382,147**

Table **19** shows the value of building permits issued in 14 metropolitan areas across Canada. In 1960 the permits issued in these areas made up over 92 p.c. of the total for the 204 municipalities.

19.—Estimated Value of Building Permits Issued in Metropolitan Areas, 1959 and 1960

Metropolitan Area	1959	1960
	$'000	$'000
Halifax	22,046	17,359
Saint John	5,348	3,269
Quebec	44,683	49,700
Montreal	362,108	290,265
Ottawa-Hull	105,372	90,187
Toronto	382,588	332,575
Hamilton	74,726	74,679
Windsor	20,162	21,538
London	40,707	30,834
Winnipeg	93,217	93,363
Calgary	107,177	73,714
Edmonton	94,632	70,096
Vancouver	160,753	109,827
Victoria	22,097	17,437

Tables **20** and **21** show the volume and value of building permits by province. These figures are useful when appraising the construction activity within and among municipalities. Comparisons of construction costs would not be warranted, however, without assurance that structures of similar size and quality were being compared. Despite limited application, this information constitutes one of the few indices of current economic activity in smaller localities.

The relative material was compiled from municipal figures and therefore varies with the terms of individual by-laws, with the methods of estimating the value of local construction and with other factors which may differ from area to area. Information is not available on the permits allowed to lapse without the relative construction being undertaken.

20.—Number of Dwelling Units Covered by Building Permits, by Province, 1957-60

Province and Year	Apartments	Other	Total
	No.	No.	No.
Newfoundland..........1957	5	320	325
1958	55	568	623
1959	10	402	412
1960	29	290	319
Prince Edward Island...1957	9	34	43
1958	29	45	74
1959	34	157	191
1960	36	57	93
Nova Scotia............1957	342	588	930
1958	484	662	1,146
1959	303	1,070	1,373
1960	422	584	1,006
New Brunswick.........1957	33	559	592
1958	103	690	793
1959	94	822	916
1960	58	477	535
Quebec..................1957	13,957	12,191	26,148
1958	19,516	18,197	37,713
1959	16,132	16,122	32,254
1960	10,053	14,112	24,165
Ontario..................1957	11,958	32,262	44,220
1958	18,584	46,421	65,005
Ontario—concluded......1959	17,324	36,239	53,563
1960	17,854	24,856	42,710
Manitoba................1957	381	2,685	3,066
1958	1,578	4,234	5,812
1959	2,117	4,246	6,363
1960	1,347	3,555	4,902
Saskatchewan...........1957	452	3,085	3,537
1958	565	3,997	4,562
1959	772	4,375	5,147
1960	571	2,796	3,367
Alberta.................1957	1,061	8,646	9,707
1958	1,912	13,159	15,071
1959	1,797	11,739	13,536
1960	1,101	6,941	8,042
British Columbia.......1957	2,318	10,889	13,207
1958	4,021	14,324	18,345
1959	3,162	11,828	14,990
1960	2,240	6,631	8,871
Canada 1957	**30,516**	**71,259**	**101,775**
1958	**46,847**	**102,297**	**149,144**
1959	**41,745**	**87,000**	**128,745**
1960	**33,711**	**60,299**	**94,010**

21.—Value of Building Permits Issued, by Province, 1957-60

Province and Year	Residential Construction			Non-residential Construction				Total
	New	Repair	Total	Industrial	Commercial	Institutional and Government	Other	
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Newfoundland........1957	2,727	762	3,489	410	1,662	3,540	19	9,120
1958	6,742	566	7,308	1,006	1,262	8,986	3	18,565
1959	4,058	592	4,650	894	1,671	5,405	—	12,620
1960	2,916	493	3,409	78	2,280	4,005	9	9,781
Prince Edward Is....1957	336	30	366	24	393	72	—	855
1958	624	24	648	24	941	2,301	—	3,914
1959	1,654	31	1,685	7	838	357	—	2,887
1960	851	71	922	134	509	792	1	2,358
Nova Scotia.........1957	6,374	1,080	7,454	1,765	4,514	3,972	19	17,724
1958	8,935	1,275	10,210	742	7,221	7,531	17	25,721
1959	13,440	1,095	14,535	2,043	8,472	7,109	15	32,174
1960	8,853	1,090	9,943	1,674	6,433	18,008	10	36,068
New Brunswick......1957	5,713	1,321	7,034	2,390	4,060	8,940	133	22,557
1958	7,244	1,098	8,342	1,269	3,681	5,399	34	18,725
1959	9,443	1,476	10,919	1,509	6,543	7,901	17	26,889
1960	5,552	1,451	7,003	835	6,031	8,675	19	22,563
Quebec...............1957	185,410	12,300	197,710	62,104	52,802	77,052	1,006	390,674
1958	268,535	12,315	280,850	32,237	86,483	91,131	479	491,180
1959	237,967	13,368	251,335	47,666	163,631	83,820	362	546,814
1960	192,556	12,720	205,276	34,957	115,393	108,645	405	464,676
Ontario..............1957	419,572	24,991	444,563	95,880	158,772	126,455	2,946	828,616
1958	626,636	22,399	649,035	90,143	153,216	203,332	1,990	1,097,716
1959	525,170	26,926	552,096	93,926	186,918	185,639	2,192	1,020,771
1960	414,536	23,995	438,531	107,442	170,545	186,859	2,442	905,819

21.—Value of Building Permits Issued, by Province, 1957-60—concluded

Province and Year	Residential Construction			Non-residential Construction				Total
	New	Repair	Total	Industrial	Commercial	Institutional and Government	Other	
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Manitoba............1957	27,517	2,577	30,094	9,463	23,249	11,523	96	74,425
1958	52,271	2,349	54,620	9,111	19,054	11,748	20	94,553
1959	60,099	2,534	62,633	6,209	20,764	20,972	15	110,593
1960	49,692	2,960	52,652	7,898	24,224	30,212	64	115,050
Saskatchewan........1957	33,239	2,482	35,721	5,132	11,716	13,086	113	65,768
1958	45,451	2,713	48,164	4,216	15,154	16,124	104	83,762
1959	53,232	3,102	56,334	5,045	15,455	23,857	79	100,770
1960	33,609	2,989	36,598	4,635	16,848	17,064	90	75,235
Alberta..............1957	89,526	4,868	94,394	9,865	33,890	34,167	535	172,851
1958	140,199	3,992	144,191	20,516	46,968	36,301	433	258,409
1959	138,861	4,557	143,418	20,777	48,122	57,580	355	270,252
1960	86,794	4,783	91,577	12,632	42,819	51,846	247	199,121
British Columbia....1957	121,209	10,363	131,572	31,536	50,554	30,192	847	244,701
1958	167,155	10,347	177,502	10,826	32,761	42,773	352	264,214
1959	146,656	11,000	157,656	14,637	56,431	26,318	264	255,306
1960	88,464	10,124	98,588	13,936	47,667	33,730	235	194,156
Canada **1957**	**891,623**	**60,774**	**952,397**	**218,569**	**341,612**	**308,999**	**5,714**	**1,827,291**
1958	**1,323,792**	**57,078**	**1,380,870**	**180,090**	**366,741**	**425,626**	**3,432**	**2,356,759**
1959	**1,190,580**	**64,681**	**1,255,261**	**192,713**	**508,845**	**418,958**	**3,299**	**2,379,076**
1960	**883,823**	**60,676**	**944,499**	**184,221**	**432,749**	**459,836**	**3,522**	**2,024,827**

The indexes given in Table **22** show as far as possible the fluctuations in building costs and their effect upon construction work and employment. The relative proportions of material and wage costs in general building are difficult to determine since such proportions vary with the type of building and the centres studied.

22.—Value of Building Permits Issued in 204 Municipalities and Index Numbers of the Building Construction Industries, 1951-60

Year	Value of Building Permits, 204 Municipalities	Average Index Numbers (1949=100)			
		Prices of Building Materials		Wage Rates in Construction Industries[1]	Employment in Building Construction[2]
		Residential	Non-residential		
	$'000				
1951........................	681,162	125.5	118.6	119.2	116.6
1952........................	802,738	124.9	123.2	129.5	127.9
1953........................	1,088,880	123.9	124.4	137.2	127.8
1954........................	1,151,087	121.7	121.8	141.1	115.0
1955........................	1,310,124	124.3	123.4	146.6	117.8
1956........................	1,318,927	128.5	128.0	152.4	140.2
1957........................	1,307,151	128.4	130.0	162.9	144.4
1958........................	1,621,636	127.3	129.8	173.6	127.6
1959........................	1,636,995^{r}	130.0^{r}	131.7	183.4	129.0
1960........................	1,382,147	129.2	132.4	195.5	121.9

[1] Compiled by the Department of Labour.

[2] As reported by employers with 15 or more employees.

Section 3.—Housing*

Subsection 1.—Government Aid to House-Building

Federal Assistance.—The role of the Federal Government in housing has expanded progressively since the introduction of the first continuing statute in 1935. Although the Government originally entered the housing field in 1918, when it made money available to the provinces for re-lending to municipalities for housing purposes, the first general piece of federal housing legislation was the Dominion Housing Act passed in 1935. This was followed by the National Housing Acts of 1938 and 1944, culminating in 1954 with the present National Housing Act, defined as "an Act to promote the construction of new houses, the repair and modernization of existing houses and the improvement of housing and living conditions". Central Mortgage and Housing Corporation, a Crown agency incorporated by Act of Parliament in 1945, administers the National Housing Act and co-ordinates the activities of the Federal Government in housing. The Corporation has the authority and responsibility for a variety of functions affecting housing in its long-term outlook as well as in its immediate requirements. It is empowered to act as an insurer of mortgage loans, as a lender or investor of public funds, as a guarantor and as an owner of property and other assets. It also acts as a research agency in fields associated with housing and enters into partnership with both provincial and municipal governments to assist in housing.

In general, the Government, through the successive Housing Acts, has attempted to stimulate and supplement the market for housing rather than assume direct responsibilities which rightfully belong to other levels of government or which could be borne more effectively by private enterprise. In each case the aim has been to increase the flow of mortgage money and to encourage lenders to make loans on more favourable terms to prospective owners.

The volume of house-building in Canada since 1935 has been spectacular. Close to half of the country's present stock of more than 4,600,000 houses have been built since the first covering legislation was enacted; about one-third of these were financed in one way or another under the Housing Acts.

Under the terms of the National Housing Act, 1954 and its subsequent amendments, the Federal Government is active in many ways.

Loan Insurance.—Mortgage loans made by approved lenders may be insured for home ownership and for rental housing. They are normally available from approved lenders (chartered banks, life, trust and loan companies) to individual home-owner applicants, to builders constructing houses for sale or for rent, to rental investors or to some special groups such as co-operative housing associations, farmers and defence workers. Upon application, the borrower pays the Corporation a fee of $35 per unit to help defray expenses incurred in the examination of plans and specifications, in the determination of lending values and in compliance inspections during construction. An approved lender may require that a home owner or home purchaser provide 5 p.c. of the value of the house from his own resources. For the home owner this equity may be in the form of cash, or a combination of cash, land and labour; for the home purchaser it is in cash. The regulations require that gross debt service—the ratio of repayments of principal, interest and taxes to the income of the borrower—should not exceed 27 p.c. Instances involving higher ratios may be considered on their merits by the approved lender and the Corporation.

The borrower pays an insurance fee which is added to the amount of the loan and is repaid over the term of the mortgage. In the case of a loan for a home-owner unit, the borrower pays a fee of 2 p.c. of the loan if mortgage advances are required during construction and 1¾ p.c. if the total loan is advanced when construction is complete. On a rental loan the borrower pays 2½ p.c. of the loan if advances are required during construction and 2¼ p.c. if the loan is not required until construction is complete. In some areas, lenders have arranged to make the inspections for progress advances.

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* Prepared in the Information Division, Central Mortgage and Housing Corporation, Ottawa.

For single-family home ownership, loans may be up to 95 p.c. of the first $12,000 of lending value and 70 p.c. of the balance but may not exceed a total of $14,200 for a house with three or fewer bedrooms. Maximum loan for a house with more than three bedrooms is $14,900; for types other than single home-owner units, the maximum loan varies with the type of unit. Loans for rental housing may be up to 85 p.c. of the lending value of the project and are subject to maximum loan amounts on dwelling types. The maximum loan available for multiple-family dwellings is $8,750 per family unit. The period for repayment of home-owner loans must be at least 25 years (unless a lesser period is requested in writing by the borrower) and may be up to 35 years if the lender agrees. The term of rental loans may not exceed 35 years and home conversion loans 15 years, unless shorter periods are requested by the borrowers. Repayments are made in equal monthly instalments, including interest and municipal taxes. The maximum interest rate is prescribed by the Governor in Council; on Dec. 17, 1959, it was increased from 6 p.c. per annum to 6¾ p.c.

Loans.—Sect. 40 of the National Housing Act authorizes the Corporation to make any type of loan that may be made by an approved lender under Part I of the Act (home-owner, defence worker, co-operative, builder or rental) or under Sect. 15 (rental guarantee projects) where in the opinion of the Corporation a loan is not available to a satisfactory applicant through an approved lender. By Government policy, direct loans for rental guarantee projects have not been made in recent years. Loans corresponding to Part I loans have in the past been restricted in general to home ownership in the smaller urban centres. On May 22, 1958, however, direct lending was extended to include builders in any area and home owners in the larger centres, with the loans subject to size limitations which placed the houses in the small home category. Loans were made through agents of the Corporation between Sept. 3, 1957 and the suspension of the arrangements—Feb. 8, 1959 for rental loans and Apr. 10, 1959 for home-owner and builder loans. Funds that were available to CMHC under the statutory vote for direct lending purposes were fully committed in the first ten months of 1959 and it was necessary to stop accepting new applications on Oct. 30.

In January 1960, Parliament voted an additional $500,000,000 for direct lending by CMHC and indicated that $175,000,000 would be allocated during the year. Lending to prospective home owners was resumed in April and to merchant builders with commitments from *bona fide* purchasers in September.

Under the National Housing Act, the Corporation, with Government approval by Order in Council, may make a loan to a limited-dividend housing company to assist in financing the construction of a low-rental housing project or in the purchase of existing buildings and their conversion into a low-rental housing project. The dividends of the company are limited by the terms of its charter to 5 p.c. or less of paid-up share capital. A loan under Sect. 16 may not exceed 90 p.c. of the lending value which is established by the Corporation. The period for repayment may not exceed the useful life of the project and in any case may not be for more than 50 years. The interest rate is established by Order in Council. The equity must be provided by the borrowers before NHA advances can be made. The company must present evidence that conditions of shortage, overcrowding or substandard housing exist in the district. Plans and specifications must be approved by the Corporation. The borrower pays to the Corporation an application fee of $35 for each housing unit in the project. This may be reduced to $17.50 a unit if evidence is submitted that dividends payable will not be taxable under the Income Tax Act when received by the shareholders.

Limited-dividend projects are subject to proven end costs. If final costs are less than originally established, the loan is reduced proportionately. The loan is also reduced by the net revenue earned prior to the completion of construction. The borrower enters into an operating agreement with the Corporation fixing the rentals, income ranges of eligible tenants, the establishment and use of reserves and the submission of annual financial statements. Those considered eligible for accommodation are persons with incomes in the lower third of the income level of the municipality. The gross family income of ingoing tenants must not exceed the level established by the Corporation for the municipality concerned. Leases terminate automatically when income exceeds the continued occupancy limit set by the Corporation.

Projects may be designed especially for the elderly. These projects have usually been sponsored by non-profit organizations requiring no return on equity. The Corporation requires that the limited-dividend company contribute at least half of the required 10 p.c. equity. The remainder may be provided by provincial or other grants; in some provinces, provincial grants are available to non-profit organizations. The income for entry must be at least twice the shelter rent and leases terminate automatically when income exceeds five times the shelter rent that would apply with a 90-p.c. loan.

New legislation, enacted in 1960, broadened the facilities of the National Housing Act to include financial assistance to municipalities for the elimination or prevention of water and soil pollution. CMHC is authorized to make a loan to a municipality or a municipal sewerage corporation for the construction or expansion of a sewage treatment project; under the Act, a sewage treatment project consists of a trunk sewage collector system, a central treatment plant, or both, for the collection and treatment of sewage from one or more municipalities. Also included is the expansion of an existing plant or existing trunk collector sewer. The loan may not exceed two-thirds of the cost of the project and the maximum repayment term is 50 years from date of completion. The interest rate is prescribed by the Governor in Council. The agreement also contains a condition whereby 25 p.c. of the loan principal and 25 p.c. of the accrued or paid interest will be forgiven, provided the project is completed to the satisfaction of the Corporation on or before Mar. 31, 1963.

Other 1960 legislation authorizes long-term loans to universities for the construction of student residences or the acquisition of existing buildings and their conversion into a university housing project. CMHC may lend up to 90 p.c. of the project cost as agreed between the university and the Corporation, with the maximum amount limited by regulation to $7,000 per student accommodated. Term of the loan may not exceed 50 years from date of the project's completion. The interest rate, prescribed by the Governor in Council, depends on the Government's borrowing rate which changes from time to time.

Guarantees.—Since 1955, loans to assist in financing the improvement of existing houses have been available under Sect. 24 of the National Housing Act. This Section authorizes CMHC to give a limited guarantee to banks or approved instalment credit agencies in return for an insurance fee paid by the borrower on loans made for additions, repairs and alterations to his own home. A home improvement loan and the balance owing on any existing NHA home improvement loan on the property may not exceed $4,000 for a one-family dwelling or $4,000 for the first unit of a duplex, semi-detached, or multiple-family dwelling, plus $1,500 for each additional unit. Loans are repayable in monthly instalments together with interest, in not more than 10 years.

Investments.—Under Sect. 36 of the National Housing Act and complementary provincial legislation, the Federal Government and the government of a province may enter into a partnership agreement to build rental housing for families of low income. The Federal Government bears 75 p.c. of the capital costs and the provincial government the remainder, although the latter may call upon the municipality concerned to bear a portion of the provincial share. Federal-provincial rental housing projects are of two types—subsidized and full-recovery. In subsidized projects, rents are related to the tenant's family income and size of family; in full-recovery projects, rents are set at a level sufficient to amortize capital costs and to recover operating expenses.

A 1960 amendment to Sect. 36 permits the Government to supplement its federal-provincial low-rental housing program by making provision for the acquisition of existing housing stock. The amendment authorizes the Government to pay 75 p.c. of the cost of acquisition, improvement and conversion of these buildings for housing purposes. This financial assistance is available on condition that the existing accommodation is located in a section designated as an urban renewal area in an agreement between a province, a municipality in the province, and the Corporation. Balance of the cost will be shared by the participating governments in the same manner as for new housing under this Section.

Under the same Section of the National Housing Act, the Federal Government and the government of a province may also enter into an agreement to provide for a land assembly project, which involves the development of raw land for housing purposes. After subdivision planning, installation of sewer and water lines and the construction of roads and sidewalks, serviced lots are made available for sale to prospective home owners or to builders for residential construction. The Federal Government pays 75 p.c. of the costs of such projects and the province concerned pays the remainder.

Corporation Building.—The Corporation may construct and administer housing and certain other buildings on its own account and for other government departments and agencies. Its responsibilities include the provision of architectural and engineering designs, the calling of public tenders and the administration of the construction contracts—including any necessary on-site surveys and engineering. On such contracts the Corporation carries out full architectural and engineering inspections.

Grants.—The Federal Government makes financial assistance available to municipalities for the study of existing conditions and the establishment of their needs for redevelopment and housing. Under Part V of the Act, the Corporation may arrange with a municipality to undertake either a city-wide study or a study in a specific area. In the case of city-wide investigation, the Government may provide as much as 75 p.c. of the cost and up to 50 p.c. for study of a limited area. Under Sect. 23, the Government may pay up to 50 p.c. of the cost of acquisition and clearance of an area marked for renewal.

Research.—The Government's housing agency is concerned also with building technology in the formulation of standards for house construction, in the use of suitable materials and in the development of new building techniques. The Corporation has no laboratory facilities but has direct experience of performance in the field and seeks the advice of specialists in the various agencies and departments of the Federal Government in such matters. Research into the factors affecting housing is concerned with the measurement of the demand for new housing, the volume of new housing built and the supply of mortgage money for house construction. The Corporation also co-ordinates and publishes statistical information on housing. Supported by funds provided under the National Housing Act, the Canadian Housing Design Council directs a program toward the improvement of housing design in Canada.

Other Federal Legislation.—The Farm Credit Act, 1959 provides for federal long-term loan assistance for housing as well as for other farm purposes (see pp. 405-406); the Veterans' Land Act, 1942 provides a form of loan and grant assistance to veterans for housing and other purposes (see pp. 298-300); and the Farm Improvement Loans Act, 1944 (see pp. 406-407) provides for guarantees for intermediate- and short-term loans made by approved lending agencies to farmers for housing and other purposes. These three statutes are concerned only incidentally with housing. The primary provisions for housing as such are those in the NHA.

Provincial Assistance.—All provinces except Prince Edward Island have complementary legislation providing for joint federal-provincial housing and land assembly projects. In addition, separate legislation with respect to housing has been enacted by several provinces.

An Act to Improve Housing Conditions, 1948, passed by the Quebec Government, provides for a subsidy on mortgage loan interest charges in excess of 3 p.c. on new dwellings. In Ontario, the Planning Amendment Act, 1952 empowers municipalities with approved official plans to designate redevelopment areas and acquire and clear land for designated purposes. The Rural Housing Assistance Act, 1952 authorizes the establishment of a Crown company—the Rural Housing Finance Corporation—to lend and invest mortgage money for new rural housing. The Junior Farm Establishment Act, 1952 provides loans to young qualified farmers for housing and other purposes.

Four provinces have legislation enabling the governments to make grants for the construction of housing for elderly people. Manitoba provides one-third of the construction costs of a two-person unit or $1,667 per unit whichever is the lesser, and one-third of the construction costs of a one-person unit or $1,400 per unit. In addition, grants are made for the construction of hostels and existing buildings—one-third of the construction cost or $1,200 per bed for the former and one-third or $700 per bed for existing buildings.

Grants in Ontario may be made only to a limited-dividend housing company which has had a loan made to it under NHA provisions. Grants are calculated at the rate of $500 for each dwelling unit or 50 p.c. of the costs in excess of the CMHC loan, whichever is the lesser. In British Columbia, capital grants do not exceed one-third of the total cost of the project and the limited-dividend housing company must provide equity amounting to 10 p.c. of the total. In Saskatchewan, capital grants are made up to 20 p.c. of the total capital cost.

Subsection 2.—Housing Activities in 1960

In 1960, house construction in Canada dropped below the previous year's level. The total number of starts was 108,858, a decline of 23 p.c. from 1959 when 141,345 starts were reported. This indication of decreased activity should be considered in the light of conditions that had been developing during the previous two or three years and had their first visible effects on the housing market in 1960.

A major factor in housing demand is the growth and movement of population and the households of which it is made up. In the past few years this has been influenced adversely by declining immigration and the fact that the persons most likely to be marrying in these years were the children of the depression and the early war years—periods of comparatively low birth rates. As a result, the rate of increase in the number of families in Canada fell to the lowest point since World War II. Also during this same period, the advancement of per capita income slowed perceptibly and contributed to lessened demand. Again, the record volume of house-building since 1945 has contributed greatly to the improvement in housing conditions with the result that in 1960 fewer people were looking for better homes.

The decline in activity was particularly noticeable in the National Housing Act sector in which there were 33,723 starts compared with 62,333 in 1959. A very substantial increase in housing starts financed under the Act by the life insurance, trust and loan companies was not enough to offset the almost complete withdrawal of the banks and the smaller number financed by Central Mortgage and Housing Corporation as a residual lender. More than two-thirds of the 1960 housing starts were financed outside the National Housing Act; here there was a smaller decline, about 5 p.c. from the level of the preceding year. Conventional loans from institutional lending institutions provided funds for 40,116 starts, down from 45,198 in 1959. However, starts financed from all other sources, including loans from individuals and from non-institutional lenders, were up to 35,019 from 33,761 in the preceding year.

A carryover of some 82,000 units kept completions running ahead of 1959 during the early months but decreased activity during the remainder of the year brought the rate down. Final figures showed total completions for 1960 at 123,757 dwellings, a decline of 15 p.c. from 1959 when 145,671 dwellings were completed.

23.—Housing Units Started and Completed, 1952-60, and by Province, 1959 and 1960

Year and Province	Started			Completed		
	Under the Housing Acts	Other	Total	Under the Housing Acts	Other	Total
	No.	No.	No.	No.	No.	No.
1952	34,400	48,846	83,246	20,633	52,454	73,087
1953	39,989	62,420	102,409	35,506	61,333	96,839
1954	50,373	63,154	113,527	39,137	62,828	101,965
1955	65,377	72,899	138,276	58,852	69,077	127,929
1956	43,395	83,916	127,311	61,957	73,743	135,700
1957	47,468	74,872	122,340	33,301	83,982	117,283
1958	81,950	82,682	164,632	69,039	77,647	146,686
1959	62,333	79,012	141,345	74,675	70,996	145,671
1960	33,723	75,135	108,858	46,035	77,722	123,757
1959						
Newfoundland	253	1,300	1,553	383	832	1,215
Prince Edward Island	40	394	434	44	308	352
Nova Scotia	1,086	3,226	4,312	1,035	2,914	3,949
New Brunswick	936	892	1,828	881	1,464	2,345
Quebec	10,779	25,486	36,265	12,847	26,073	38,920
Ontario	28,856	25,302	54,158	36,686	17,595	54,281
Manitoba	3,067	3,516	6,583	3,323	2,500	5,823
Saskatchewan	2,763	3,684	6,447	2,593	3,770	6,363
Alberta	9,138	3,936	13,074	10,230	3,953	14,183
British Columbia	5,415	11,276	16,691	6,653	11,587	18,240
1960						
Newfoundland	106	1,920	2,026	313	1,909	2,222
Prince Edward Island	45	227	272	44	325	369
Nova Scotia	971	3,076	4,047	775	3,099	3,874
New Brunswick	556	1,224	1,780	772	1,096	1,868
Quebec	6,266	22,323	28,589	8,358	22,953	31,311
Ontario	16,563	25,719	42,282	20,962	26,020	46,982
Manitoba	1,525	3,607	5,132	2,791	3,684	6,475
Saskatchewan	1,641	2,698	4,339	2,253	3,069	5,322
Alberta	3,885	4,502	8,387	6,381	5,096	11,477
British Columbia	2,165	9,839	12,004	3,386	10,471	13,857

24.—Housing Units Started in Metropolitan and Major Urban Areas, 1960

Area	Population 1960[1]	Starts			Starts per 1,000 Population
		Under the Housing Act	Other	Total	
	'000	No.	No.	No.	No.
Metropolitan Areas—					
Calgary	292	1,867	1,367	3,234	11
Edmonton	339	1,119	1,061	2,180	6
Halifax	177	381	883	1,264	7
Hamilton	370	738	1,944	2,682	7
London	173	710	1,130	1,840	11
Montreal	1,901	1,715	14,630	16,345	9
Ottawa-Hull	411	2,380	2,194	4,574	11
Quebec	369	932	1,204	2,136	6
Saint John	99	217	244	461	5
St. John's	89	42	122	164	2
Toronto	1,518	6,162	8,018	14,180	9
Vancouver	766	1,097	3,578	4,675	6
Victoria	142	256	709	965	7
Windsor	195	289	207	496	3
Winnipeg	451	1,140	2,665	3,805	8
Totals, Metropolitan Areas	**7,292**	**19,045**	**39,956**	**59,001**	**8**
Major Urban Areas—[2]					
Brantford	61	72	550	622	10
Chicoutimi-Jonquière	112	284	148	432	4
Fort William-Port Arthur	98	175	249	424	4
Guelph	43	146	215	361	8
Kingston	64	138	234	372	6
Kitchener	120	626	970	1,596	13
Moncton	65	177	105	282	4
Niagara Falls	53	101	92	193	4
Oshawa	98	288	412	700	7
Peterborough	65	256	214	470	7
Regina	103	581	403	984	10
St. Catherines	107	149	228	377	4
Sarnia	66	261	271	532	8
Saskatoon	91	611	526	1,137	13
Sault Ste. Marie	63	271	311	582	3
Shawinigan	62	59	118	177	3
Sherbrooke	74	114	289	403	5
Sudbury	101	256	230	486	5
Sydney	88	44	206	250	3
Timmins	41	29	76	105	3
Trois Rivières	87	237	245	482	6
Totals, Major Urban Areas	**1,662**	**4,875**	**6,092**	**10,967**	**7**
Other areas	9,088	8,791	30,099	38,890	4
Canada[3]	**18,042**	**32,711**	**76,147**	**108,858**	**6**

[1] Based on assessment reports. [2] House-building activity in the fringe areas of major urban centres is included. [3] Excludes the Yukon and Northwest Territories.

Operations under the National Housing Act.—In contrast to 1959 when Central Mortgage and Housing Corporation provided more than half the loan funds committed under the Act, approved lenders supplied 59 p.c. of NHA mortgage money in 1960. The life insurance, trust and loan companies approved loans totalling $232,200,000 and the chartered banks made commitments for $500,000 but cancellations of 1959 approvals exceeded new loans, reducing approved lenders' total to $231,900,000. Investment of public funds through CMHC loans totalled $161,100,000.

In 1960, 37,308 dwellings were financed under the Act. Of this number, 36,610 were financed through mortgage loans—21,156 by approved lenders' loans and 15,454 by CMHC loans. Federal-provincial partnership arrangements provided for 698 dwellings. In 1959, 58,082 units were financed under the Act.

The life insurance and trust and loan companies increased their NHA lending by 92 p.c. and, by the end of 1960, had approved loans for 21,111 dwellings compared with 11,015 in 1959. The banks made loans for 45 houses, in contrast to 14,067 in the preceding year. The substantial increase in lending by life insurance and trust and loan companies was influenced partly by a change in the NHA interest rate. Late in 1959 the maximum rate of interest was increased to $6\frac{3}{4}$ p.c. from 6 p.c. By mid-1960 there was a marked easing in the supply of mortgage credit with the result that the new rate for insured mortgages became more competitive and these lenders began investing at a greater pace.

CMHC direct loans were made to home owners for 10,168 dwellings and to merchant builders for 3,693 houses. Included in the home-owner approvals were 560 for veterans building under Part II of the Veterans' Land Act and 22 dwellings in co-operatives. In 1959, loans to owner-applicants financed 14,559 homes and builders 13,188.

In March 1960, Parliament increased the statutory provision for Corporation lending by $500,000,000 but the Government indicated commitments from these public funds should be considerably less than the $343,000,000 committed in 1959. Loan requirements were so designed that the smaller amount of public funds would serve the most urgent needs first. Eligibility was limited to applicants with annual incomes of up to $5,000, with adjustments for family size to $5,600. The direct lending program was under constant review and when it became apparent that demand in the lower income sector would not require all of the available funds, the income ceilings were raised to $7,000 and $7,600. Also, at this time builders became eligible for loans if they could provide commitments from *bona fide* purchasers. Faced with some evidence of abatement in demand among the $7,000 level, and in a move to aid winter employment, the Government, in October, removed all income restrictions and permitted builders to apply for two loans for display houses.

25.—Mortgage Loan Approvals[1] under the National Housing Act, by Month, 1956-60

Month	Number of Units				
	1956	1957	1958	1959	1960
January	1,245	325	2,786	2,933	110
February	2,067	1,132	5,515	2,395	523
March	4,101	1,902	6,776	3,559	1,169
April	5,817	3,083	6,026	6,664	1,611
May	7,242	4,711	8,989	6,348	3,489
June	6,873	4,696	9,045	7,069	4,042
July	4,795	5,614	9,351	5,857	2,509
August	4,633	3,592	7,874	3,840	3,131
September	2,985	4,425	8,234	10,095	5,173
October	2,583	10,104	8,614	7,850	5,685
November	1,020	7,725	6,559	3,732	6,493
December	662	3,365	5,271	584	3,810

[1] Includes CMHC loans—direct and agency.

26.—Net Loans Approved under the National Housing Act, by Province, 1956-60

NOTE.—Figures for 1945-51 will be found in the 1955 Year Book, p. 744, and from 1952-55 in the 1960 edition, p. 736.

Year and Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
1956—												
Loans.......No.	200	12	547	398	5,390	17,466	2,026	1,252	4,899	3,602	2	35,794
Dwellings... "	178	12	650	412	7,105	20,292	2,136	1,528	5,080	3,888	2	41,283
Amount.....$'000	2,002	124	6,087	3,916	68,205	202,763	19,814	13,544	50,737	39,914	26	407,132
1957—												
Loans.......No.	152	13	458	388	6,277	22,019	1,116	1,519	4,686	3,344	2	39,974
Dwellings... "	144	13	532	392	9,144	25,920	1,472	2,121	5,247	3,946	2	48,933
Amount.....$'000	1,648	133	5,218	3,832	87,737	267,256	13,823	19,962	53,710	40,594	26	493,939
1958—												
Loans.......No.	311	38	785	908	9,732	32,214	2,852	2,335	9,655	6,671	14	65,515
Dwellings... "	314	40	972	972	14,267	41,210	3,819	2,509	10,498	7,554	14	82,169
Amount.....$'000	3,691	392	10,139	9,376	142,586	451,201	38,111	27,301	116,763	83,186	178	882,924
1959—												
Loans.......No.	237	34	933	865	7,969	21,168	2,587	2,589	7,784	4,978	27	49,171
Dwellings... "	237	40	1,025	924	9,505	26,152	3,041	2,704	8,483	5,172	27	57,310
Amount.....$'000	2,691	402	11,009	9,081	99,159	285,630	32,258	30,158	96,741	58,714	324	626,167
1960—												
Loans.......No.	70	53	589	564	6,977	12,378	1,529	1,488	3,975	1,585	38	29,246
Dwellings... "	70	54	834	577	7,778	17,979	1,715	1,594	4,238	1,733	38	36,610
Amount.....$'000	789	522	8,579	5,949	81,912	191,200	19,037	16,865	48,670	19,016	453	392,992

Loans to Limited-Dividend Companies.—During 1960, CMHC made loan commitments to limited-dividend companies for 1,591 dwellings—680 for elderly persons and 911 for lower income families. Municipalities and charitable organizations initiated projects involving 692 units while entrepreneurs were responsible for the remainder. Because of the limited funds available for CMHC loans, some restrictions were imposed for part of the year on entrepreneur-sponsored projects.

Borrower and House Characteristics.—There were one or two children in the families of 50 p.c. of NHA borrowers in 1960, while 27 p.c. of the families had three or more children. The age of the average owner was 33 years. The cost of the average single-family house built under NHA in 1960 was $14,380. In addition, the borrower paid a mortgage insurance fee of $227, which was incorporated in the mortgage payments. The average downpayment on a house was $3,033 in 1960 and monthly payments of principal, interest and municipal taxes came to $100, representing 21.2 p.c. of the borrower's average annual income.

Some 42 p.c. of all NHA borrowers had incomes below $5,000, 49 p.c. had incomes between $5,000 and $7,999 and the remainder had incomes of $8,000 or more. The average income of all NHA borrowers was $5,620, compared with $5,716 in 1959.

Construction costs of houses on which loans were approved under the Act in 1960 declined for the first time since the War. The decline from 1959 to 1960 was from $10.78 per sq. foot to $10.60 per sq. foot. Land costs were also down from $2,533 to $2,473. These lower costs more than offset an increase in the average size of dwelling from 1,108 to 1,125 sq. feet. The reduction in costs in 1960 was associated in part with the decline in building material prices during the year but perhaps of greater importance was the increased competitiveness of the housing market during the year

Home Improvement Loans.—In 1960 the banks approved 23,580 home-improvement loans for a total of $30,100,000. Although eligibility for these NHA-guaranteed loans was extended to owners of rental properties, the 1960 total fell below that of the preceding year when 32,523 loans for $37,500,000 were approved.

Loans for University Housing Projects.—On Dec. 2, 1960, the National Housing Act was amended making provision for Corporation loans to universities to assist in the construction of living accommodation for resident students. Six preliminary applications and two formal applications were received by the year-end.

Loans for Municipal Sewage Treatment Projects.—The Dec. 2 amendment also authorized the Corporation to make loans to municipalities or municipal sewerage corporations to assist in the construction of sewage treatment projects for the control of water and soil pollution. During December, more than 60 municipalities made inquiries regarding loans and six applications were received by the Corporation.

Urban Renewal.—Federal contributions were approved in 1960 to assist the Cities of Saint John, Sarnia and Vancouver in the redevelopment of blighted areas. The grants, covering one-half the cost of acquiring and clearing the three areas, amounted to approximately $5,800,000. Revenue derived from the use of the cleared land is shared by participating governments in proportion to their financial assistance.

Federal grants amounting to $150,000 were approved to aid housing studies in Corner Brook, Montreal, Port Moody, Prince Rupert and Churchill. The studies are designed to identify substandard areas and to formulate proposals for the solution of problems attributable to blight. Since 1955 when the first study was undertaken, 33 have been initiated.

Federal-Provincial Projects.—During 1960, approval was given to federal-provincial partnership arrangements for public housing projects in Saint John, Halifax and at two locations in Vancouver. These four projects will provide a total of 698 low-rental dwellings. From 1950 when the first project was approved under federal-provincial arrangements to the end of 1960, a total of 9,610 units in 81 projects have been approved. In 1960, approval was given for the acquisition of 363 lots in land assembly projects and 652 serviced lots were sold; the latter figure brings to 8,588 the number of lots serviced and sold.

Housing Research and Community Planning.—The Canadian Housing Design Council received federal support under the National Housing Act to continue its activities in the field of improved housing design. In 1960, the Council once again conducted competitions in the fields of single-family house design and house grouping. In addition, the Council received grants to publish a study of new methods of providing housing in greater density, at the same time retaining some of the characteristics and scale of single-family houses. Funds were also provided to assist a study of the garden-court house. Five travelling scholarships were awarded under the Act to final-year architectural students who made a study of housing design and construction in Canada and the United States.

The Corporation continued its support of the Community Planning Association of Canada and provided fellowships and bursaries for scholars in the fields of housing, planning and urban development. Financial assistance was also given to the four Canadian universities offering professional planning courses. The Royal Architectural Institute of Canada was given a grant to assist in the production of the Report of the Committee of Inquiry into the Design of the Residential Environment.

CHAPTER XVI.—LABOUR*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Section 1.—The Government in Relation to Labour

Subsection 1.—Federal Labour Legislation

The federal Department of Labour was established in 1900 under the Conciliation Act which provided machinery to aid in preventing and settling labour disputes and required the Department to collect, compile and publish statistical and other relevant information. The Department also assumed the administration of the Fair Wages Policy adopted in the same year for the protection of workmen employed in the execution of Federal Government contracts and on works aided by grants from public funds.

The statutory duty of disseminating information concerning labour and industrial matters is set out in the Department of Labour Act passed in 1909. In addition, the Minister is responsible for the administration of the following statutes: Conciliation and Labour Act (1906); Government Annuities Act (1908)†; Government Employees Compensation Act (1918); Fair Wages and Hours of Labour Act (1935); Unemployment Insurance Act (1940); Vocational Training Co-ordination Act (1942); Reinstatement in Civil Employment Act (1946); Merchant Seamen Compensation Act (1946); Industrial Relations and Disputes Investigation Act (1948); Canada Fair Employment Practices Act (1953); Female Employees Equal Pay Act (1956); and Annual Vacations Act (1958).

Fair Wages Policy.—The Fair Wages Policy applying to all Federal Government contracts was first set forth in a Resolution of the House of Commons (1900) and later incorporated in an Order in Council and amended from time to time. Wages and hours on contracts for construction are now regulated by the Fair Wages and Hours of Labour

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* Except as otherwise noted, this Chapter has been revised under the direction of the Deputy Minister of the Department of Labour, Ottawa.

† Statistics and details of administration under this Act are given in Chapter XXIV on Insurance.

Act and Order in Council P.C. 2029 of Dec. 22, 1954. Hours of work on construction contracts are limited to eight per day and 44 per week, except in an emergency or in exceptional circumstances where exemption is granted by Order in Council; wages to be paid are those current for the type of work in the district or, if there are no current rates, fair and reasonable rates as determined by the Minister of Labour.

Wages and hours of work on contracts for equipment and supplies are also regulated by Order in Council P.C. 2029. The hours of such work must be those fixed by the custom of the trade in the district where the work is performed, or fair and reasonable hours. The wages must be current or fair and reasonable but in no event shall they be less than those established by statute or regulation of the province in which the work is being performed. This Order in Council contains a clause prohibiting discrimination against any person in matters of employment because of that person's race, national origin, colour or religion, or because he has made a complaint or given information with respect to such alleged discrimination.

*Government Prevailing Rate Employees.**—Many departments and agencies of government employ non-office workers in public buildings, defence establishments, parks and forests, experimental farms, canal operation, airports and government vessels, survey parties, special projects, etc. Such positions are exempt from the operations of the Civil Service Act and rates of pay are fixed by the Treasury Board in consultation with the Department of Labour on the basis of prevailing private industry rates for comparable work in the employment area. Data used in the determination of these pay rates are secured from wage surveys made by Industrial Relations Officers of the Department of Labour and wage research conducted by the Economics and Research Branch as well as from collective agreements and information supplied by some provincial Departments of Labour.

The Fair Wages and Prevailing Rates Division of the Industrial Relations Branch also recommends rates of pay for 4,000 commissionaires employed by various government departments and agencies throughout Canada, provides wage data to assist certain Crown corporations in the preparation of their wage schedules, and gives assistance in the establishment of class titles, job descriptions and the application of job evaluation techniques.

Three sets of comprehensive Regulations have been established by the Treasury Board governing hours of work, overtime, vacations, statutory holidays, sick leave, pensions, etc., for (1) prevailing rate workers generally employed, (2) ships' officers and (3) ships' crews.

The Industrial Relations and Disputes Investigation Act.—This legislation came into effect by proclamation on Sept. 1, 1948, revoking the Wartime Labour Relations Regulations in effect since March 1944 and repealing the Industrial Disputes Investigation Act which had been in force from 1907 until suspended by the Wartime Regulations in 1944. The Act protects proceedings commenced and decisions, orders and certifications made under the wartime legislation in so far as these involve services authorized by the Act.

The Act applies only to industries within federal jurisdiction, viz., navigation, shipping, interprovincial railways, canals, telegraphs, steamship lines and ferries, both international and interprovincial, aerodromes and air transportation, radio broadcasting stations, and works declared by Parliament to be for the general advantage of Canada or of two or more provinces. However, the Act provides that provincial authorities if they so desire may enact similar legislation for application to employees within provincial jurisdiction and make mutually satisfactory arrangements with the Federal Government for the administration of such legislation by the federal authorities.

In general, the Act in its important features provides that employees and employers shall have the right to organize and bargain collectively and that trade unions may be certified as bargaining agents for employee groups. Trade unions and employers are required, upon notice, to bargain collectively in good faith. The Act provides for invoking collective bargaining negotiations and for the mediation of conciliation officers and conciliation boards in reaching collective agreements. Employees may change bargaining agents at times under conditions specified in the Act, which also prescribes conditions affecting the duration and renewal of collective agreements. Collective agreements are required to contain provision for the arbitration of disputes concerning the meaning or violation of such agreements and where such provision is lacking application may be made for its establishment. The Act prohibits unfair labour practices, i.e., the interference with or domination of trade unions by employers or interference, discrimination and coercion in trade union activity. The conditions that must be observed prior to strike and lockout action are set down in the Act. Industrial inquiry commissions may be appointed to investigate industrial matters or disputes.

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* Statistics on numbers and earnings of prevailing rate and other groups of federal employees exempt from the Civil Service Act are given at pp. 118-128.

The Minister of Labour is charged with the administration of the Act and is directly responsible for the provisions affecting the appointment of conciliation officers, conciliation boards, industrial inquiry commissions, consent to prosecute, and complaints that the Act has been violated or that a party has failed to bargain in good faith.

The Canada Labour Relations Board administers provisions concerning the certification of bargaining agents, the writing of a procedure into a collective agreement for the final settlement of disputes concerning the meaning or violation of such agreement, and the investigation of complaints made to the Minister that a party has failed to bargain collectively.

Detailed statistics concerning activities under the Act may be found in the Annual Report of the Department of Labour. In brief, from Sept. 1, 1948 to Dec. 31, 1960, the Canada Labour Relations Board received 1,214 applications for certification, 707 of which were granted, 239 rejected, 238 withdrawn and 30 were pending at the end of the period. Of the 752 industrial disputes dealt with under the conciliation provisions of the Act, 659 were settled by conciliation officers and conciliation boards, 48 were not settled, 18 lapsed and 27 were pending at Dec. 31, 1960.

Labour-Management Co-operation Service.—During World War II, production committees based on the principle of joint consultation between labour and management were established in many vital industries. Since 1947 the establishment of labour-management production committees in industry has been encouraged and assisted by the Labour-Management Co-operation Service, a division of the Industrial Relations Branch of the Department of Labour. The number of active committees has grown from 526 in 1947 to approximately 1,652 at Dec. 31, 1960. Their activities are directed toward such objects as better understanding between management and labour, improved production efficiency, improved quality, reduction of waste, accident prevention, good housekeeping and reduction of absenteeism.

Reinstatement in Civil Employment Act.—This Act provides for the reinstatement in their civil employment of discharged members of the Armed Forces and other designated persons. It was originally passed in 1942, revised in 1946, and broadened in its application in 1954. The Act is administered by the Minister of Labour through the National Employment Service (see p. 762).

Canada Fair Employment Practices Act.—This Act, which came into effect on July 1, 1953, prohibits discrimination in employment based on race, colour, religion or national origin. It applies only to industries within federal jurisdiction—those covered by the Industrial Relations and Disputes Investigation Act (see pp. 719-720). This law prohibits acts of discrimination by employers; discrimination by trade unions in regard to membership or employment; the use by employers of employment agencies that practise discrimination; and of advertisements or inquiries in connection with employment that express, directly or indirectly, any limitation, specification or preference as to race, colour, religion or national origin.

Female Employees Equal Pay Act.—This Act came into effect on Oct. 1, 1956, and applies to employers and employees engaged in works, undertakings or businesses coming within federal jurisdiction. The Act, in its principal provision, prohibits an employer from employing a female for any work at a rate of pay that is less than the rate at which a male is employed by that employer for identical or substantially identical work.

Annual Vacations Act.—This Act was passed in January 1958 and became effective by proclamation on Oct. 1, 1958. It provides a one-week vacation with pay for the first year of employment and a two-week vacation for subsequent years. Vacation pay is computed at 2 p.c. of wages, as defined in the Act, for a vacation of one week and 4 p.c. for a vacation of two weeks.

Subsection 2.—Provincial Labour Legislation

Because of the authority given by the British North America Act to provincial legislatures to make laws in relation to local works and undertakings and in relation to property and civil rights, there is a large body of provincial labour legislation dealing with relations between employers and employees and the trade unions representing employees, working conditions, qualifications of tradesmen, compensation for work accidents, and other matters. In each province a Department of Labour is charged with the administration of labour laws. Legislation for the protection of miners is administered by departments dealing with mines. The workmen's compensation law in each province is administered by a board appointed by the Lieutenant-Governor in Council.

Factory legislation and shops legislation in several of the provinces prohibit child labour, regulate the hours of work of women and young persons, and contain provisions to ensure the safety and protect the health of employees in industrial and commercial establishments. All provinces have minimum wage legislation, and most have legislation establishing maximum working hours in at least some types of employment. The industrial standards legislation in Nova Scotia, New Brunswick, Ontario, Manitoba, Saskatchewan and Alberta enables the wages and hours of work agreed upon at a conference of representatives of employers and employees in designated trades to be made the minimum standards throughout the trade concerned in specified areas. The Quebec Collective Agreement Act permits certain terms of collective agreements between employers and trade unions to be made binding on all in the industry throughout the province or in a defined area.

In all provinces there is legislation to protect freedom of association, to promote collective bargaining and to assist in the settlement of industrial disputes. Nine provinces have legislation dealing with apprenticeship and all have legislation providing for the licensing of certain classes of workmen. Seven provinces have equal pay laws, and six have fair employment practices Acts prohibiting discrimination in hiring and conditions of employment and in trade union membership on grounds of race, colour, religion or national origin. All have workmen's compensation laws.

Provincial labour legislation enacted in 1960 is outlined in the following paragraphs.

Newfoundland.—The *Labour Relations (Amendment) Act, 1960* amended the provision enacted in 1959 under which the Lieutenant-Governor in Council was empowered to dissolve any trade union in the province that was a branch, local or affiliate of a trade union organization outside the province, where, in the opinion of the Lieutenant-Governor in Council, a substantial number of the superior officers, agents or representatives of such a trade union organization had been convicted of any heinous crime and retained their positions in the union organization. The 1960 amendment transferred the power of dissolution from the Lieutenant-Governor in Council to the Supreme Court of Newfoundland acting upon an application of the Attorney General. Dissolution would become effective three months from the date of the order and only if the trade union in that period had not severed its connection with the outside organization. Provisions requiring the Labour Relations Board to decertify a union on the grounds that any of its officers had been convicted of offences in connection with labour disputes, or where a judgment had been entered against the union for tortious acts, were repealed.

A new provision relates to the situation arising from the transfer of ownership of a business. A bargaining agent that was certified in respect of the employees before the transfer continues to be the bargaining agent within the meaning of the Act, and a collective agreement concluded between the bargaining agent and the former owner is binding on the new owner.

A change was also made with respect to the conditions under which a clause in an agreement requiring union membership as a condition of employment may be implemented by an employer. Notwithstanding the terms of an agreement, an employer may employ a person who is otherwise qualified for employment and who has applied for but been refused membership in the union.

The section requiring every collective agreement to include a provision for final settlement of disputes arising out of the agreement was revised by prescribing in the Act an arbitration clause that will be deemed to be a term of an agreement where the Board finds that no procedure, or no adequate procedure, has been provided. The prescribed clause requires the setting up of a three-man arbitration board to deal with any dispute arising out of the interpretation, application, administration or alleged violation of the agreement, including any question as to whether a matter is arbitrable.

The *Trade Union Act*, passed in 1960, requires trade union locals in Newfoundland to register with the Registrar of Trade Unions in the provincial Department of Labour. Before a union can apply for registration it must appoint three union members as trustees in whom will be vested the real and personal property of the union for the use and benefit of the members. With the application for registration the union must file a copy of its constitution, which must contain comprehensive rules for the government, regulation, conduct and management of the union. Copies of the rules and of the union's annual financial statement are to be supplied by the union to its members. Annual returns must also be filed by the union with the Registrar, showing the trustees and officers and an audited financial statement.

If the Registrar believes that a union is not complying with its rules or with the Act, he may carry out such investigation as he deems fit. If a union has violated its rules or the Act, he may suspend or cancel the certificate. A union may appeal from the Registrar's decision to the Supreme Court.

The *Logging Camps Act, 1960* replaces earlier legislation dealing with the establishment and operation of logging camps. It requires logging camps to be so located, constructed and used as to provide for the well-being, reasonable comfort and safety of the loggers, and authorizes the making of regulations specifying health and safety standards. Regulations have since been issued under the Act.

The *Regulation of Trade Schools Act, 1960* requires the registration with the Minister of Education of private schools giving instruction in specified trades, and provides for regulation and inspection of such schools.

Prince Edward Island.—The *Minimum Wage for Men Act* gives the Labour Relations Board of the province authority to fix minimum wage rates for male employees, subject to review by the Minister of Labour. The Board previously had such authority, under legislation adopted in 1959, to fix minimum rates for women. No rates have yet been set.

An amendment to the *Workmen's Compensation Act* increases the sum payable for funeral expenses of a work accident victim from $200 to $300 and provides for payment of up to $100 for transporting the body of the workman to the place of burial. The minimum payment for total disability is increased from $15 to $20 per week.

The *Trade Union Act* was amended to exclude from the operation of the Act an employer who carries on business of a seasonal nature which does not require general employment for a period of more than six continuous months in a calendar year. Another change establishes a procedure for revoking the certification of a trade union that no longer represents a majority of the employees concerned.

Nova Scotia.—The *Workmen's Compensation Act* was amended to extend the coverage and increase compensation. Permanent partial disability pensions paid under the Act are now based on 75 p.c. of earnings, regardless of when the accident occurred.

New Brunswick.—The *Elevators and Lifts Act*, brought into force June 1, 1961, provides for uniform standards throughout the province for passenger and freight elevators and other lifting devices, and for a provincial system of inspection under the Minister of Labour.

An amendment to the *Workmen's Compensation Act* increases the monthly payment to the widow of a deceased workman from $50 to $60. The increase is made applicable to existing pensioners.

Quebec.—An amendment to the Quebec *Labour Relations Act*, effective Jan. 5, 1960, strengthens the Act's prohibition of discrimination for union activity by providing that an aggrieved employee may bring his case to the Quebec Labour Relations Board. The Board, if the complaint is found to be valid, may order the employer to reinstate the employee with pay for lost time. The amendment also provides for a larger Board and specifically states the principle of equal representation of management and labour on the Board.

The *Workmen's Compensation Act* was amended by raising the maximum annual earnings on which compensation is based from $4,000 to $5,000, increasing widows' pensions from $55 to $75 a month, and increasing the allowances for dependent children from $20 to $25 (orphans from $30 to $35). Funeral benefits are increased from $200 to $400, and the lump sum payable to the widow from $200 to $300.

Ontario.—Following an extensive inquiry by a Select Committee of the Legislature, the *Labour Relations Act* was substantially amended, effective Oct. 22, 1960. Provision is now made for the appointment by the Lieutenant-Governor in Council of one or more jurisdictional disputes commissions to deal with complaints arising out of a work assignment; such a commission may make an interim order settling the work assignment issue, which order must be complied with, but there is provision for a review by the commission with full hearing of all parties concerned, and for appeal to the Labour Relations Board from a final direction of the commission. Another amendment gives to the parties to a contract negotiation dispute the means of referring their dispute to a mediator of their own choosing. Where the parties are entitled to conciliation services under the Act, they may request the Minister of Labour to appoint a mediator, whom they have selected, to discharge the functions of both a conciliation officer and a conciliation board. A new provision dealing with arbitration of disputes arising out of a collective agreement seeks to eliminate delays, gives arbitrators new powers of investigation and inquiry, and provides that arbitrators' decisions, filed with the Registrar of the Supreme Court, will be enforceable as an order of the court.

The Labour Relations Board is given new authority to deal with a complaint from any person that he has been refused employment, discharged, discriminated against, coerced, or otherwise dealt with contrary to the Act. If the Board finds that the complaint is justified, it may order remedial action, and the Board order, filed in the office of the Registrar of the Supreme Court, will become enforceable as an order of that court. A new provision was added, restricting activities associated with an illegal strike, to the effect that "no person shall do any act if he knows or ought to know that, as a probable consequence of the act, another person or persons will engage in an unlawful strike or an unlawful lockout".

Three new provisions relate to internal affairs of trade unions: (1) if a provincial, national or international trade union establishes a trusteeship over a subordinate body in the province, it is required to report its actions to the Board, along with a statement setting out the terms under which supervision or control is to be exercised; a trusteeship may be established for a period not longer than 12 months and may be extended for an additional period of 12 months with the consent of the Board; (2) every trade union, upon the request of a member, is required to furnish him with a copy of the union's audited annual financial statement; and (3) a strike vote taken by a union must be conducted by secret ballot.

The *Judicature Act* was amended to provide that an interim injunction in a labour dispute may be granted without a hearing of both parties only where the court is satisfied that a breach of peace, injury to a person, or damage to property has occurred or is likely to occur. Normally, an interim injunction will be granted only following a hearing, with two days' notice to the persons affected; as before, an interim injunction is limited to four days' duration.

The *Employment Agencies Act, 1960* replaces earlier legislation regulating private employment agencies. The new Act applies to agencies engaged in the business of procuring persons for employment and employment for persons, for a fee or other remuneration, and also to the business of counselling or testing persons for a fee to assist them in securing employment. Agencies subject to the Act are required to have an annual licence issued by the Ontario Supervisor of Employment Agencies. Regulations are laid down respecting licences and maximum fees that an agency may charge for its services.

An Act to amend the *Workmen's Compensation Act* makes the current rates of compensation to dependants of a deceased workman apply to all dependants in receipt of compensation, regardless of the date of the accident.

Manitoba.—An amendment to the *Wages Recovery Act* raises from $200 to $500 the maximum amount of unpaid wages that may be recovered under the Act in summary proceedings before a Justice of the Peace.

An amendment to the *Workmen's Compensation Act* makes provision for a monthly payment not exceeding $75 to a wholly dependent mother of a deceased workman. Previously the Workmen's Compensation Board was empowered to make an award proportionate to the pecuniary loss sustained, subject to specific maximum amounts. All persons in this category in receipt of benefits when the Act came into force are eligible for the new allowance.

Saskatchewan.—The *Annual Holidays Act* was replaced by a new Act consolidating the amendments made in the past several years and introducing minor changes for purposes of clarification. The basic requirement of the Act, that an employee is entitled to a vacation with pay of two weeks after a year of employment and to three weeks after five years, was unchanged.

Alberta.—Part V of the *Alberta Labour Act*, which is the labour relations law of the province, was substantially amended. A new provision authorizes the Lieutenant-Governor in Council to declare by proclamation that normal procedures in disputes in certain essential services are to be replaced by emergency procedures. Such a declaration may be made when, in the opinion of the Lieutenant-Governor in Council, life or property would be in serious jeopardy, due to a labour dispute, by reason of a breakdown in the supply of water, heat, electricity or gas to the public, or by reason of a stoppage of hospital services in any area. After the declaration, any strike or lockout or other action in the labour dispute otherwise authorized or permitted under the Act becomes illegal. The Minister of Labour is forthwith to establish a procedure to assist the parties to the dispute to reach a settlement and is empowered "to do all such things as may be necessary to settle the dispute", and in the meantime the *status quo* is to be maintained, except that the employer, with the consent of the bargaining agent, may give effect to a proposed change in wages and hours.

A change in the Act makes it an unfair labour practice on the part of an employee to refuse to perform work for his employer, or for an officer or representative of a trade union to encourage or consent to such refusal, because of a dispute over work assignment. Another amendment aimed at preventing picketing in support of an illegal strike provides that where a strike is illegal no trade union or member of the trade union or other person shall "dissuade or endeavour to dissuade anyone" from entering an employer's place of business, or from dealing in or handling the products of any person, or doing any business with any person.

The *Judicature Act* was amended to specify the conditions under which interim injunctions may be issued to restrain actions in connection with a strike or lockout. In all cases an opportunity must be given for a hearing. The period of notice must be sufficient to enable the person served to attend and in no case may be less than three hours. A new provision requires a bargaining agent to distribute to its members a copy of the union's annual financial statement.

British Columbia.—An amendment to the *Metalliferous Mines Regulation Act* makes a number of general changes in the system of supervision to ensure safe work practices, and in certain safety rules. A new provision requires that every person employed underground in a mine must be under the supervision of a person who holds a shiftboss certificate issued by a Board of Examiners appointed under the Act. An applicant for a shiftboss certificate must have at least three years of practical mining experience, or a mining engineering degree from a university approved by the Board and one year of mining experience, and he must have a thorough knowledge of the rules established by the Act and of safe working practices.

Regulation of Wages and Hours of Labour under Industrial Standards Legislation and the Quebec Collective Agreement Act.—The Industrial Standards Acts of Nova Scotia, New Brunswick, Ontario and Saskatchewan and the Labour Act of Alberta provide that wages and hours agreed upon at a conference of representatives of employers and employees, called by the Minister of Labour or his representative, may be made legally binding by Order in Council on the industry in the area concerned. The Nova Scotia Act applies only to construction work at Halifax, Dartmouth and Sydney.

In *Nova Scotia*, 13 schedules of hours and wages for individual building trades were in force during the year ended Mar. 31, 1959.

In *New Brunswick*, four schedules for individual building trades were in force during the year ended Mar. 31, 1959.

In *Quebec*, under the Collective Agreement Act, hours and wages and also apprenticeship, vacations with pay and family allowances provisions, established by a collective agreement voluntarily entered into by employers and unions or groups of employees, may be made legally binding by Order in Council on all employers and employees in the industry in the district covered by the agreement, if the parties are sufficiently representative of the industry. At Mar. 31, 1959, 103 agreements covering 220,973 workers and 29,191 employers had been generalized to apply either throughout the province or to a certain district. The agreements in force throughout the province apply to the following industries: building materials, the manufacture of women's coats and suits, dresses, millinery, women's handbags, men's and boys' clothing, men's and boys' hats and caps, men's and boys' shirts, fine gloves and work gloves, shoes, furniture, paint, corrugated and uncorrugated paper boxes, the tanning industry and the casket manufacturing industry. Other agreements concern industries in particular cities or parts of the province, including all building trades and printing trades in large urban centres and many rural districts.

In *Ontario*, there were 135 wages and hours schedules in force at Mar. 31, 1959. Throughout the province, schedules were in effect for the women's coat and suit industry, the men's and boys' clothing industry, men's and boys' hats and caps, the millinery industry and the hard furniture industry. In the construction industry, 58 schedules, each for a single trade in a single locality, covered one or more trades in 27 zones. Four schedules were in effect for certain zones in the retail gasoline service industry, and barbers had schedules in 67 zones.

In *Manitoba*, the Fair Wage Act provides similar machinery for fixing wages and hours in any business, trade or undertaking except agriculture. Orders in Council under this legislation have been passed fixing wages and hours in the barbering and hair-dressing trades. A schedule for the construction industry applies to private construction work in the larger centres of population as well as to public construction work throughout the province.

In *Saskatchewan*, 17 schedules were in effect at Mar. 31, 1959. The schedule for barbers covered the whole province; others applied to bakers and bakery salesmen, carpenters, electrical workers, painters, and beauty culture operators in one or more areas.

In *Alberta*, 30 schedules were in effect during 1959. These governed, in one or more areas, bakers and bakery salesmen, certain individual building trades, dairy employees, garage and service-station workers, radio service, laundry and dry-cleaning employees and barbers.

Regulation of Hours and Annual Holidays.—Five provinces—Ontario, Manitoba, Saskatchewan, Alberta and British Columbia—have statutes that either place absolute limits on working hours or require time and one-half the regular rate to be paid if work is continued after specified limits. There is, in addition, an Act of limited application in Quebec. In the provinces that have no special hours-of-work legislation, the only statutory regulation of hours, apart from that described above under the Industrial Standards Acts and the Quebec Collective Agreement Act, is that imposed by factories Acts, mines Acts and, in Newfoundland, legislation governing shops. In New Brunswick and Quebec the limits imposed by the factories Acts apply only to women and boys under 18 years of age. Several minimum wage Acts give authority for the regulation of hours as well as of wages.

In Ontario there is a maximum eight-hour day and 48-hour week with certain exceptions. In Alberta the maximum daily and weekly hours in the cities of Calgary, Edmonton, Lethbridge and Medicine Hat are eight and 44; in the remainder of the province they are eight and 48. In British Columbia hours are limited to eight in a day and 44 in a week. In these three provinces the Acts apply to most workers except farm labourers and domestic servants. In Saskatchewan the Act requires time and one-half to be paid for work after eight hours daily and 44 hours weekly and applies to workers in all industries except agriculture and domestic service. A Manitoba Act covering most industrial workers in the province requires time and one-half to be paid for work done after eight hours in a day and after 48 hours in a week for men and 44 hours for women. In all provinces that have Acts regulating hours, longer hours may be worked in an emergency or by permission of the administrative authority.

Seven provinces—Nova Scotia, Quebec, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia—have legislation in effect providing for annual holidays with pay for workers in most industries, and New Brunswick has legislation requiring annual holidays in the mining and construction industries and for fish, fruit and vegetable packers. In all these provinces, except British Columbia, Saskatchewan and Manitoba, workers are entitled to a one-week holiday with pay after a year of employment. A two-week holiday is given in British Columbia, Saskatchewan and Manitoba after a year of employment and in Alberta after two years except in the case of workers in the highway, pipeline and heavy construction industries who are entitled to a two-week vacation after one year of service. A three-week holiday is required in Saskatchewan after five years of service with the same employer. A worker employed for less than a year is entitled, in Quebec, to a half-day for each month of employment and, in Saskatchewan, to one day for each month. Coal miners in Alberta are entitled to a one-day holiday with pay for every 20 days worked in a month but not more than two weeks in a year.

Farm workers are excluded from the holiday provisions in all provinces, and domestic servants in all but Manitoba and Saskatchewan. In addition, Quebec exempts public corporation employees, salesmen, janitors and watchmen, and certain part-time workers; Ontario exempts professional workers, salesmen, and funeral directors and embalmers; Manitoba and Saskatchewan exempt ranch and market garden employees, and British Columbia exempts professional workers and horticultural workers.

Minimum Wage Regulations.—In Nova Scotia the minimum wage law applies only to women. In Ontario, though the Act applies to both sexes, Orders apply only to women. In Newfoundland, New Brunswick and Alberta there are separate Orders for men and women and lower rates are set for women. In British Columbia all but a few Orders set the same rates for men and women. In Manitoba, Quebec and Saskatchewan all Orders and the rates set apply to both sexes.

Table 1 shows the minimum rates in effect in December 1960 for several classes of establishment in the principal cities. In Newfoundland, New Brunswick, Saskatchewan and British Columbia the rates set are for the entire province. Elsewhere rates vary according to zone.

1.—Minimum Wage Rates for Experienced Workers in Certain Cities, by Sex, December 1960

Item, Type of Establishment and Sex		St. John's, Nfld.	Halifax, N.S.	Saint John, N.B.	Montreal, Que.	Toronto, Ont.	Winnipeg, Man.	Regina, Sask.	Edmonton, Alta.	Vancouver, B.C.
Maximum hours per week to which the rates apply.	M.	48	—	48	48[1]	—	48	44	44	44
	F.	48	48	48	48[1]	48	44	44	44	44
		cts. per hour	$ per week	cts. per hour	cts. per hour	$ per week	cts. per hour	$ per week	$ per week	cts. per hour
Factories	M.	50	—	65[2]	70	—	66	32	30	75
	F.	35	21.60	60	70	30	66	32	28	60
Laundries, etc.	M.	50	—	—	70	—	66	32	30	75
	F.	35	21.60	60	70	30	66	32	28	75
Shops	M.	50	—	—	70	—	66	32	30	65
	F.	35	21.60	60	70	30	66	32	28	65
Hotels, restaurants, etc.	M.	50	—	—	64[3]	—	66	32	30	65
	F.	35	21.60	55	64	30	66	32	28	65
Beauty parlours	M.	50	—	—	70	—	66	32	30	35.00[4]
	F.	35	21.60	60	70	30	66	32	28	35.00[4]
Theatres and amusement places.	M.	50	—	—	70	—	66	32	30	75
	F.	35	21.60	60	70	30	66	32	28	75
Offices	M.	50	—	—	70	—	66	32	30	75
	F.	35	21.60	60	70	30	66	32	28	75

[1] In hotels and restaurants, the rates apply to a maximum of 54 hours per week. [2] Applies only to canning or processing of fish, vegetables or fruit. [3] Chauffeurs, watchmen, stationary enginemen and firemen 70 cents; bell boys 56 cents. [4] Dollars per week.

Section 2.—The Labour Force*

The current pace of economic activity in Canada necessitates constant planning and study. To the labour leader, the business man, the social administrator and the legislator, this pace requires a continuous process of plan-revision. To provide up-to-date and reliable information concerning the Canadian labour force, a current and periodic analysis of the state of employment in Canada was organized. A labour force survey, on a sample basis, was conducted in the autumn of 1945 and quarterly surveys were carried on until November 1952, when the survey was placed on a monthly basis. A multi-stage area sample was used involving the selection of progressively smaller sample areas and ultimately of households. Random methods of choice were used at every stage of selection so that all members of the population had an equal chance of inclusion. The present sample covers over 35,000 households in more than 160 different areas of Canada. The estimates of the labour force are restricted to the civilian labour force; net strength of the Armed Forces is obtainable directly from official sources. Inmates of institutions and Indians living on reserves are excluded.

The labour force surveys provide a classification of persons 14 years of age or over on the basis of their activity during the week preceding the beginning of interviewing for the survey. The main divisions of the population are defined as follows:—

> **Labour Force.**—The civilian labour force is composed of that portion of the civilian non-institutional population 14 years of age or over who, during the survey week, were employed or unemployed.
>
> **Employed.**—The employed include all persons who, during the survey week: (a) did any work for pay or profit; (b) did any work which contributed to the running of a farm or business operated by a related member of the household; or (c) had a job but were not at work because of bad weather, illness, industrial dispute, or vacation, or because they were taking time off for other reasons. Persons who had jobs but did not work during the survey week and who also looked for work are included in the unemployed as persons without work and seeking work.
>
> **Unemployed.**—The unemployed include all persons who, through the survey week: (a) were without work and seeking work, i.e., did no work during the survey week and were looking for work; or would have been looking for work except that they were temporarily ill, were on indefinite or prolonged layoff, or believed no suitable work was available in the community; or (b) were temporarily laid off for the full week, i.e., were waiting to be called back to a job from which they had been laid off for less than 30 days.
>
> **Not in the Labour Force.**—Those not in the labour force include all civilians 14 years of age or over (exclusive of institutional population) who are not classified as employed or unemployed. This category includes those going to school, keeping house, too old or otherwise unable to work, and voluntarily idle or retired. Housewives, students and others who worked part-time are classified as employed. If they looked for work they are classified as unemployed.

The estimates derived from the labour force surveys are subject to sampling error. In general, the percentage of error tends to decrease as the size of the estimate increases. The chances are about 19 out of 20 that the difference between the estimate and the figure which would have been obtained from a complete count is less than shown below.

Size of Estimate	*Sampling Variability*
50,000	8,000
100,000	11,000
500,000	24,000
1,000,000	33,000
5,000,000	58,000

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* Prepared in the Special Surveys Division, Dominion Bureau of Statistics.

2.—Estimates of the Civilian Labour Force and its Main Components, Annual Averages, 1946-60

Note.—Annual averages for 1946-52, inclusive, are based on estimates from quarterly surveys and those for 1953-60 on monthly estimates. Figures do not include inmates of institutions and Indians on reservations. Newfoundland is included from 1950 only.

Year	Civilian Population (14 years of age or over)	Civilian Labour Force (14 years of age or over)							Persons not in the Labour Force (14 years of age or over)
		Employed					Unemployed	Total Labour Force	
		Non-agriculture			Agriculture	Total (employed)			
		Paid Workers	Other	Total (non-agriculture)					
	'000	'000	'000	'000	'000	'000	'000	'000	'000
1946	8,779	2,990	490	3,480	1,186	4,666	163	4,829	3,950
1947	9,007	3,156	555	3,711	1,122	4,832	110	4,942	4,065
1948	9,141	3,234	545	3,779	1,096	4,875	114	4,988	4,153
1949	9,268	3,298	539	3,837	1,077	4,913	141	5,055	4,213
1950	9,615	3,411	547	3,958	1,018	4,976	186	5,163	4,453
1951	9,732	3,623	535	4,158	939	5,097	126	5,223	4,509
1952	9,956	3,755	523	4,278	891	5,169	155	5,324	4,632
1953	10,164	3,842	535	4,377	858	5,235	162	5,397	4,767
1954	10,391	3,840	525	4,365	878	5,243	250	5,493	4,898
1955	10,597	4,027	519	4,546	819	5,364	245	5,610	4,987
1956	10,805	4,286	523	4,809	776	5,585	197	5,782	5,023
1957	11,108	4,440	542	4,981	744	5,725	278	6,003	5,105
1958	11,357	4,454	529	4,983	712	5,695	432	6,127	5,230
1959	11,562	4,615	548	5,163	692	5,856	373	6,228	5,334
1960	11,789	4,727	553	5,280	675	5,955	448	6,403	5,386

Characteristics of the Civilian Labour Force, 1946-60.—During the year 1960, the civilian non-institutional population 14 years of age or over averaged 11,789,000, a growth of 34.3 p.c. since 1946. The labour force increased 32.6 p.c. from 1946 to an estimated total of 6,403,000 in 1960. This somewhat slower growth of the labour force is reflected in the labour force participation rate; in 1960, the proportion of the population 14 years of age or over in the labour force was 54.3 p.c. compared with 55.0 p.c. in 1946. The chief factors contributing to the decrease in the labour force participation rate were a higher average school-leaving age for children, a higher proportion of persons 65 years or over in the population, and a lower average retirement age. The net effect of these factors was reduced by the higher proportion of women having jobs outside the home.

There were 5,955,000 persons employed in 1960, an increase of 27.6 p.c. since 1946. Employment in agriculture, which averaged 1,186,000 in 1946, declined by 43.1 p.c. to 675,000 in 1960. At the same time, employment in non-agricultural industries increased 51.7 p.c. from 3,480,000 in 1946 to 5,280,000 in 1960; non-agricultural paid workers increased 58.1 p.c. from 1946 to 1960. The level of unemployment fluctuated greatly during the years since 1946; in that year, the unemployment rate averaged 3.4 p.c. of the labour force, compared with 7.0 p.c. in 1960.

In 1960, the number of persons outside the labour force averaged 5,386,000, an increase of 36.4 p.c. over the 1946 figure of 3,950,000. This increase, relatively greater than that of the total population 14 years of age or over, was effected by the same factors that contributed to the decrease in labour force participation over the same period. Participation by males 14 years of age or over in the labour force declined from 85.2 p.c. in 1946 to 80.8 p.c. in 1960. On the other hand, the proportion of females of working years in the labour force went up from 24.7 p.c. in 1946 to 28.0 p.c. in 1960. Married women constituted 45.7 p.c. of all employed women in 1960 compared with 27.2 p.c. in 1946.

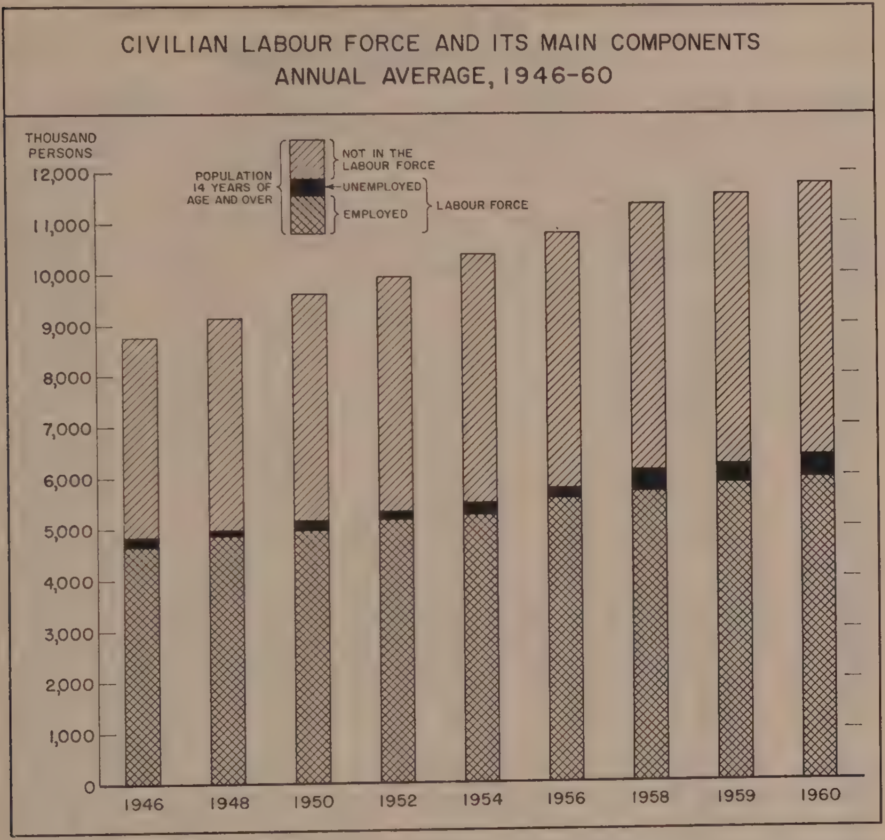
As a proportion of the population 14 years of age or over, men and women both showed large decreases in agricultural employment and substantial increases in non-agricultural employment, in unemployment, and in students attending school. The proportion of women keeping house in their own homes was 63.2 p.c. in 1946, rose to 66.7 p.c. in 1953 and then declined to 60.9 p.c. in 1960.

The distribution of the employed by industry group has changed considerably since 1946. As a percentage of the total, employment in service increased from 16.8 p.c. in 1946 to 24.6 p.c. in 1960, in trade from 12.3 p.c. to 16.5 p.c., and in construction from 4.8 p.c. to 7.0 p.c. In agriculture, employment dropped from 25.4 p.c. of the total employed in 1946 to only 11.3 p.c. in 1960. A similar pattern of change was evident in the industrial distribution of employed men. For women, the most notable changes occurred in service, where the proportion of total employed women increased from 33.4 p.c. in 1946 to 46.1 p.c. in 1960, in agriculture where the proportion dropped from 14.8 p.c. to 3.1 p.c. over the 15 years, and in manufacturing which accounted for 23.7 p.c. of total female employment in 1946 compared with 19.0 p.c. in 1960.

3.—Percentage Distribution of the Population 14 Years of Age or Over in the Labour Force and Non-labour Force Categories, by Sex, 1946-60

Note.—Percentages are annual averages; those for 1946-52, inclusive, are based on estimates from quarterly surveys and those for 1953-60 on monthly estimates. Newfoundland included from 1950 only.

Sex and Year	Population (14 years or over)	Percentage Distribution of the Population 14 Years of Age or Over							
		Labour Force				Not in Labour Force			
		Employed		Unemployed	Total	Women Keeping House	Persons Going to School	Other	Total
		Agriculture	Non-agriculture						
	'000								
Men—									
1946	4,400	23.4	58.7	3.1	85.2	...	5.5	9.3	14.8
1947	4,548	21.5	61.6	2.0	85.1	...	5.3	9.6	14.9
1948	4,611	21.1	61.9	2.1	85.1	...	5.2	9.7	14.9
1949	4,661	20.9	61.6	2.6	85.1	...	5.0	9.9	14.9
1950	4,822	19.5	61.2	3.3	84.0	...	5.1	10.9	16.0
1951	4,857	17.9	63.9	2.1	83.9	...	5.0	11.1	16.1
1952	4,971	16.6	64.2	2.6	83.4	...	5.4	11.2	16.6
1953	5,075	16.1	64.0	2.8	82.9	...	5.6	11.5	17.1
1954	5,188	16.2	61.8	4.2	82.2	...	5.8	12.0	17.8
1955	5,290	14.8	63.3	4.0	82.1	...	6.0	11.9	17.9
1956	5,397	13.6	65.4	3.2	82.2	...	6.2	11.6	17.8
1957	5,552	12.7	65.2	4.4	82.3	...	6.3	11.4	17.7
1958	5,671	11.6	63.4	6.7	81.7	...	6.8	11.5	18.3
1959	5,767	11.2	64.3	5.6	81.1	...	7.3	11.6	18.9
1960	5,876	10.6	63.6	6.6	80.8	...	7.6	11.6	19.2
Women—									
1946	4,379	3.6	20.5	0.6	24.7	63.2	5.1	7.0	75.3
1947	4,459	3.3	20.4	0.4	24.1	64.7	5.0	6.2	75.9
1948	4,530	2.7	20.4	0.4	23.5	65.3	5.2	6.0	76.5
1949	4,606	2.3	20.9	0.4	23.6	65.9	4.9	5.6	76.4
1950	4,793	1.6	21.0	0.6	23.2	65.9	5.0	5.9	76.8
1951	4,874	1.5	21.5	0.5	23.5	66.1	4.9	5.5	76.5
1952	4,985	1.3	21.9	0.5	23.7	65.7	4.9	5.7	76.3
1953	5,089	0.8	22.2	0.4	23.4	66.7	5.3	4.6	76.6
1954	5,203	0.8	22.3	0.6	23.7	66.5	5.3	4.5	76.3
1955	5,306	0.7	22.6	0.6	23.9	66.0	5.5	4.6	76.1
1956	5,408	0.7	23.7	0.5	24.9	64.9	5.5	4.7	75.1
1957	5,555	0.7	24.5	0.6	25.8	63.9	5.7	4.6	74.2
1958	5,686	0.9	24.4	1.0	26.3	63.2	6.1	4.4	73.7
1959	5,795	0.8	25.1	0.8	26.7	62.3	6.4	4.6	73.3
1960	5,914	0.9	26.1	1.0	28.0	60.9	6.6	4.5	72.0


CIVILIAN LABOUR FORCE AND ITS MAIN COMPONENTS
ANNUAL AVERAGE, 1946-60

4.—Percentage Distribution of the Employed, by Industrial Group and Sex, 1946-60

NOTE.—Percentages are annual averages; those for 1946-52, inclusive, are based on estimates from quarterly surveys and those for 1953-60 on monthly estimates.

Sex and Year	Total Employed	Percentage Distribution							
		Agriculture	Other Primary Industries	Manufacturing	Construction	Transportation and Other Utilities	Trade	Finance, Insurance and Real Estate	Service
	'000								
Men—									
1946	3,609	28.5	5.0	26.7	6.1	9.2	10.5	2.1	11.9
1947	3,777	25.9	4.9	27.0	6.5	9.7	11.5	2.0	12.5
1948	3,828	25.5	5.0	26.8	7.3	9.6	11.7	2.1	12.0
1949	3,847	25.3	4.6	27.1	8.1	9.3	11.5	2.1	12.0
1950	3,891	24.1	5.0	26.8	8.4	9.5	11.2	2.0	13.0
1951	3,974	21.8	5.6	27.1	8.6	9.8	12.2	2.2	12.7
1952	4,005	20.5	5.3	26.6	8.3	10.5	13.4	2.3	13.1
1953	4,063	20.1	4.8	27.1	8.4	10.4	14.0	2.3	12.9
1954	4,044	20.7	5.3	26.1	8.1	9.8	14.3	2.3	13.4
1955	4,128	19.0	5.8	26.5	8.8	9.7	14.3	2.4	13.5

4.—Percentage Distribution of the Employed, by Industrial Group and Sex, 1946-60—concluded

Sex and Year	Total Employed	Percentage Distribution							
		Agriculture	Other Primary Industries	Manufacturing	Construction	Transportation and Other Utilities	Trade	Finance, Insurance and Real Estate	Service
	'000								
1956	4,265	17.3	5.9	26.8	9.4	10.1	14.4	2.5	13.6
1957	4,325	16.3	5.5	27.5	9.9	10.1	14.3	2.6	13.8
1958	4,256	15.5	4.8	27.5	9.8	10.2	14.7	2.7	14.8
1959	4,353	14.8	4.4	27.4	9.9	10.3	14.8	2.7	15.7
1960	4,362	14.3	4.7	26.8	9.3	10.2	15.3	2.7	16.7
Women—									
1946	1,057	14.8	[1]	23.7	[1]	4.3	18.5	4.7	33.4
1947	1,056	13.7	[1]	23.2	[1]	4.2	19.1	5.1	33.9
1948	1,047	11.7	[1]	23.1	[1]	4.1	19.4	5.6	35.4
1949	1,066	9.7	[1]	24.6	[1]	4.6	19.3	5.8	35.5
1950	1,085	7.2	[1]	25.3	[1]	4.9	19.2	5.9	37.1
1951	1,123	6.4	[1]	24.3	[1]	5.3	20.6	6.1	36.8
1952	1,154	5.5	[1]	23.3	[1]	5.1	21.5	6.2	37.5
1953	1,172	3.6	[1]	24.1	[1]	5.1	20.9	6.2	39.2
1954	1,199	3.3	[1]	22.4	[1]	5.1	20.9	6.3	41.2
1955	1,236	2.8	[1]	22.7	[1]	4.9	20.6	6.4	41.7
1956	1,320	3.0	[1]	22.3	[1]	5.1	20.3	6.6	41.5
1957	1,400	2.8	[1]	21.6	0.8	5.1	20.1	6.7	42.5
1958	1,439	3.6	[1]	20.2	0.8	5.0	19.9	6.7	43.7
1959	1,502	3.2	[1]	20.0	0.8	4.9	19.9	6.6	44.3
1960	1,593	3.1	[1]	19.0	0.7	4.5	19.6	6.7	46.1
Both Sexes—									
1946	4,666	25.4	4.0	26.0	4.8	8.1	12.3	2.6	16.8
1947	4,832	23.2	3.8	26.2	5.2	8.5	13.2	2.7	17.2
1948	4,875	22.5	3.9	26.0	5.9	8.4	13.3	2.9	17.1
1949	4,913	21.9	3.6	26.5	6.5	8.3	13.2	2.9	17.1
1950	4,976	20.5	3.9	26.4	6.7	8.5	12.9	2.9	18.2
1951	5,097	18.4	4.4	26.5	6.8	8.8	14.1	3.0	18.0
1952	5,159	17.2	4.2	25.8	6.6	9.3	15.2	3.1	18.6
1953	5,235	16.4	3.8	26.4	6.6	9.2	15.6	3.2	18.8
1954	5,243	16.8	4.1	25.3	6.4	8.7	15.8	3.2	19.7
1955	5,364	15.3	4.5	25.6	6.9	8.7	15.7	3.3	20.0
1956	5,585	13.9	4.6	25.7	7.4	8.9	15.8	3.5	20.2
1957	5,725	13.0	4.3	26.1	7.6	8.9	15.7	3.6	20.8
1958	5,695	12.5	3.7	25.6	7.5	8.9	16.0	3.7	22.1
1959	5,856	11.8	3.4	25.5	7.5	8.9	16.2	3.7	23.0
1960	5,955	11.3	3.5	24.7	7.0	8.6	16.5	3.8	24.6

[1] Fewer than 10,000 women employed in this group.

5.—Percentages of Employed Women, Married and Other than Married, in Agriculture, in Non-agriculture and in All Industries, 1946-60

Note.—Percentages are annual averages; those for 1946-52, inclusive, are based on estimates from quarterly surveys and those for 1953-60 on monthly estimates.

Year	Agriculture		Non-agriculture		All Industries	
	Married	Other	Married	Other	Married	Other
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1946	54.2	45.8	22.5	77.5	27.2	72.8
1947	53.1	46.9	22.4	77.6	26.6	73.4
1948	56.5	43.5	23.7	76.3	27.5	72.5
1949	55.3	44.7	25.1	74.9	28.0	72.0
1950	59.6	40.4	26.8	73.2	29.1	70.9
1951	61.7	38.3	28.2	71.8	30.3	69.7
1952	60.5	39.5	30.0	70.0	31.7	68.3
1953	51.3	48.7	32.8	67.2	33.5	66.5
1954	52.9	47.1	34.8	65.2	35.4	64.6
1955	50.8	49.2	37.0	63.0	37.4	62.6
1956	57.3	42.7	38.8	61.2	39.3	60.7
1957	59.5	40.5	40.6	59.4	41.1	58.9
1958	67.8	32.2	42.5	57.5	43.4	56.6
1959	69.1	30.9	44.1	55.9	44.9	55.1
1960	71.4	28.6	44.9	55.1	45.7	54.3

Section 3.—Employment, Earnings and Hours*

Subsection 1.—Historical Commentary

Monthly reports on employment have been furnished for many years to the Dominion Bureau of Statistics by establishments usually employing 15 persons or over in the following major industrial divisions: forestry; mining; manufacturing; construction; transportation, storage and communication; public utility operation; trade; finance, insurance and real estate; and certain branches of the service industry, mainly hotels and restaurants, laundries and dry-cleaning plants, recreational and business services. The surveys relate to all sectors of the eight industrial divisions first named. To supplement the employment record that goes back to 1921, monthly statistics of weekly payroll disbursements have been prepared since 1941, permitting calculation of per capita weekly wages and salaries. Subsequently, these series were carried back, on an annual basis only, to 1939.

The current survey was further extended in the late months of 1944 to include information on earnings and hours of wage-earners for whom industrial establishments can furnish statistics of hours actually worked and paid for during periods of absence. Commencing in 1946, monthly figures of employment have been published separately for men and women. Additional and more detailed data on earnings and hours of work of both wage-earners and salaried employees are collected annually from manufacturers for the last week in October; this series yields separate figures for men and women in the two categories.

The statistics obtained monthly since 1941 relate to all paid workers on the staffs of respondents and their pay for services rendered or during paid absences in their last pay periods in the month, except that casual employees on strength for less than one day in the pay period are omitted. Statistics for owners are excluded by definition, even though they receive part of the return on their investment in the form of salaries. The earnings include wage and salary payments for straight-time and overtime work, shift differentials, regularly paid production, incentive and cost-of-living bonuses and commissions. Payrolls and hours reported for periods exceeding one week are reduced to weekly equivalents.

Although the surveys are restricted to establishments usually employing 15 persons or more, they include high but variable proportions of all paid workers at work in the covered industries as enumerated in the 1951 Census. The estimates of coverage in Canada range from 45 p.c. in the included service groups to 92 p.c. in manufacturing and 96 p.c. in mining, with the industrial composite figure relating to 79 p.c. of the total number in the industries surveyed. It is also estimated that the establishments contributing to the monthly record employed 62 p.c. of the total number of paid workers enumerated in all industries, including those in agriculture, fishing and trapping, education, health, government and other services excluded from the surveys, as well as employees of small establishments in the covered industries for which monthly data are not obtained.

The general level of industrial employment changed little in 1960 from a year earlier, the monthly index numbers (1949 = 100) averaging 118.7, down 0.8 p.c. from the 1959 figure of 119.7. Declines were recorded for workers of both sexes, but because employment generally was better maintained in industries employing large staffs of women, the index number for such workers fell to a lesser extent than that for men, and the proportion of women rose very slightly in 1960. Since 1957 when employment in the industries surveyed reached its peak, the index for men declined from 122.3 to 117.4 in 1960, and the index for women from 123.7 to 123.1.

The contraction in the industries surveyed took place mainly in the goods-producing industries, forestry being the only major industrial division in this category to report improvement over 1959. The annual average index numbers for mining, construction and manufacturing showed percentage losses exceeding that recorded in the industrial composite figure. The movements in the service-producing industries showed more variation. Employment declined slightly in public utility operation, and fell by 2.8 p.c. in transportation, storage and communication, the reduction in the latter group being recorded largely in rail transportation. The other groups in this category—trade, finance, insurance and real estate, and the service industries surveyed—all reported moderate expansion in employment.

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* Prepared in the Employment Section, Labour Division, Dominion Bureau of Statistics.

At 210.9, the composite index number of weekly payrolls was the highest on record in 1960, 2.5 p.c. above the 1959 index. There was an increase of 3.2 p.c. in the general average of weekly wages and salaries in the year, bringing the figure to $75.83. The 1960 index number of per capita earnings stood at 176.5 (1949 average = 100) compared with 171.0 a year earlier. The movement of this index has been steadily upward in the period for which statistics are available, i.e., from 1939.

Subsection 2.—Employment and Weekly Wages and Salaries, 1960

The small decline in the general index of employment in 1960 resulted largely from lower indexes for Ontario and the western provinces. There was virtually no change in the average of the Quebec index numbers as compared with a year earlier and, except in Nova Scotia, the situation was somewhat better in the Atlantic region. A reduction of 1.7 p.c. was recorded in Ontario, where staffs reported in manufacturing were reduced by 2.7 p.c., with most major groups in the division sharing in the downward movement. Employment in mining and construction fell by over 5 p.c. On the other hand, the trend was moderately favourable in forestry, trade, finance, insurance and real estate, and in the service industries surveyed. In the Prairie Provinces, Saskatchewan reported the largest percentage loss, in which slackness in transportation was an important factor. The index for British Columbia showed only a small decline.

Employment by Industry.—The 1960 index number for manufacturing was lower by 1.4 p.c. than in 1959. This decline was smaller than the declines indicated in 1954 and 1958, the other years within the decade in which a contraction was shown in the year-to-year comparison. Most of the reduction in 1960 took place in the heavy manufacturing industries, which showed a general loss of 2.5 p.c., as compared with one of 0.5 p.c. in plants producing non-durable goods. There was general curtailment in the former category, all major components except non-ferrous metal products reporting smaller working forces. Industrial disputes contributed to the losses in iron and steel, although in the general situation these were a factor of much less importance than in 1959. Within the light manufacturing group, continued expansion in employment in paper products, chemicals, printing and publishing and miscellaneous manufacturing was outweighed by declines in clothing, textile, leather, rubber and tobacco factories. There was little general change in the important food and beverage group, which showed a decrease of only 0.2 p.c.

On the whole, employment in construction fell by 3.5 p.c. between 1959 and 1960, bringing the annual index to 125.7, its lowest position since 1956. There was a rather smaller reduction in mining, which was affected by a further weakening in demand for coal and base metals, including uranium. On the other hand, improvement was indicated in non-metal mining.

Relatively, the largest gain over 1959 in employment in the broad industrial divisions in 1960 was recorded in forestry (6.5 p.c.). That industry was also somewhat more active than in 1958 but was quieter than in any earlier year since 1940.

Employment in transportation, storage and communication continued to fall in 1960, when the index was lower by 2.8 p.c. than in 1959. Railroad staffs declined by 6.4 p.c. but there was a substantial rise in those engaged in air transport. For the second successive year, establishments in the communications industries reported smaller working forces. Public utility operation showed a slight reduction, the index at 137.8 being 0.9 points lower in 1960. The movement continued favourable in trade, finance, insurance and real estate, and in the service industries surveyed. In the latter two broad industrial divisions, employment has risen uninterruptedly over a period of many years; also, a minor decline in the index in trade in 1958 from 1957 was the only reversal of the steadily upward movement that has been recorded therein since 1943.

6.—Annual Average Index Numbers of Employment by Industrial Group 1951-60, and Monthly Indexes 1959 and 1960

NOTE.—These indexes are calculated as at the last day of each month, on the base 1949=100.

Year	Forestry (chiefly logging)	Mining	Manufacturing	Construction	Transportation, Storage and Communication	Public Utility Operation	Trade	Finance, Insurance and Real Estate	Service[1]	Industrial Composite
Averages—										
1951	140.3	111.0	108.1	110.7	106.8	103.7	107.4	116.2	103.3	109.1
1952	119.5	116.9	109.9	123.1	110.9	108.0	110.4	122.1	107.0	111.9
1953	98.3	110.8	113.0	118.1	111.2	112.4	113.1	122.4	108.8	113.1
1954	96.3	110.4	107.3	110.6	109.0	116.1	114.8	128.0	111.7	109.9
1955	102.9	113.7	109.8	115.0	110.8	119.2	118.7	132.1	115.0	112.9
1956	113.2	122.7	115.8	131.8	118.3	126.3	126.3	137.1	125.1	120.7
1957	99.3	127.2	115.8	135.7	120.4	133.6	131.8	145.0	131.9	122.6
1958	75.9	123.5	109.8	126.2	115.5	137.6	131.6	149.3	135.1	117.9
1959	78.9	123.4	111.1	130.3	114.3	138.7	135.3	153.2	139.3	119.7
1960	84.0	120.1	109.5	125.7	111.1	137.8	136.7	156.7	143.2	118.7
1959—										
January	77.5	122.4	107.5	105.0	109.3	132.0	129.6	151.3	131.6	113.7
February	70.1	118.8	107.5	104.0	108.5	132.5	129.0	150.8	131.7	113.0
March	52.9	118.4	108.4	107.1	109.7	133.1	131.1	151.0	132.6	113.7
April	42.6	120.6	109.5	120.1	112.3	135.8	131.5	151.5	134.5	115.7
May	61.9	123.3	111.7	133.0	116.0	139.8	133.5	151.8	138.7	119.6
June	87.2	126.4	114.2	144.0	118.3	142.7	134.7	152.4	144.8	123.5
July	78.1	127.8	112.2	150.7	119.7	145.0	133.8	152.8	147.2	123.1
August	76.0	127.0	113.5	154.4	119.2	145.6	135.2	155.7	147.5	124.2
September	97.2	125.8	115.3	151.7	118.0	142.4	138.7	155.5	144.6	125.6
October	102.6	124.9	113.9	146.5	116.1	140.4	140.0	155.4	141.5	124.4
November	102.7	123.7	110.6	133.5	114.6	138.4	143.1	155.3	139.7	121.8
December	97.5	121.8	108.4	113.3	110.1	136.7	143.4	155.0	137.3	118.1
Percentage distribution, 1959[2]	2.0	4.0	42.3	9.7	13.1	2.2	16.5	5.3	4.9	100.0
1960—										
January	87.7	122.6	108.6	103.9	106.8	132.7	133.4	154.8	137.1	115.1
February	81.2	122.1	108.9	101.9	107.1	132.2	131.5	155.0	137.6	114.6
March	60.9	121.8	109.0	102.1	107.4	132.8	132.6	154.7	138.1	114.2
April	41.0	113.4	108.9	111.0	109.8	133.7	134.3	154.8	140.1	114.8
May	61.1	118.0	110.6	130.4	112.5	138.7	135.6	155.2	143.8	118.9
June	89.1	122.1	112.2	147.3	114.9	143.3	137.0	155.8	149.5	123.0
July	93.2	123.3	110.2	144.5	115.4	144.4	135.3	156.1	150.7	121.9
August	95.2	123.9	111.7	146.4	115.6	144.3	136.4	156.7	151.0	123.1
September	101.3	123.2	111.6	144.3	114.5	140.8	138.3	159.5	147.6	123.1
October	107.9	120.0	109.6	139.1	112.6	138.8	139.6	159.4	143.7	121.5
November	100.5	118.2	108.1	129.9	110.3	137.2	142.9	159.5	141.2	119.7
December	89.4	113.1	104.1	107.8	106.3	134.7	144.0	159.3	138.6	114.8
Percentage distribution, 1960[2]	2.2	3.8	42.2	9.4	12.6	2.1	16.9	5.6	5.2	100.0

[1] Consists mainly of hotels, restaurants, laundries, dry-cleaning establishments and business and recreational services.

[2] The proportion of employees reported in the industries to the total reported by all employers making returns in Canada (12-month average).

7.—Annual Average Index Numbers of Employment, by Industrial Division and Group, 1955-60

NOTE.—These indexes are calculated as at the last day of each month, on the base 1949=100.

Industry	1955	1956	1957	1958	1959	1960
Forestry (chiefly logging)	**102.9**	**113.2**	**99.3**	**75.9**	**78.9**	**84.0**
Mining	**113.7**	**122.7**	**127.2**	**123.5**	**123.4**	**120.1**
Metal mining	117.2	126.8	136.3	135.7	140.8	137.3
Gold	80.7	76.5	77.0	75.0	73.6	73.2
Other metal	151.3	173.5	191.7	192.4	203.5	197.0
Iron	..	..	221.6	221.5	236.8	268.9
Fuels	102.8	110.4	109.8	102.9	93.9	89.5
Coal	69.8	67.3	61.4	56.4	48.6	45.7
Oil and natural gas	211.5	258.8	287.0	282.8	278.8	277.8
Non-metal	131.6	141.9	138.7	129.6	131.9	132.2
Asbestos	..	..	..	..	166.1	173.8
Manufacturing	**109.8**	**115.8**	**115.8**	**109.8**	**111.1**	**109.5**
Durable goods	117.4	126.4	125.3	114.8	115.5	112.6
Non-durable goods	103.2	106.6	107.6	105.6	107.3	106.8
Foods and beverages	106.9	109.6	111.4	112.3	114.6	114.4
Meat products	118.2	123.8	124.7	130.0	139.3	136.0
Dairy products	107.0	109.2	114.3	121.9	125.4	124.2
Canned and cured fish	114.1	114.4	112.6	113.9	113.1	109.7
Canned and preserved fruits and vegetables	106.6	110.5	116.7	109.8	110.3	112.4
Grain mill products	105.0	103.1	103.6	104.3	103.8	102.9
Bread and other bakery products	107.3	108.8	109.2	109.4	109.9	111.2
Biscuits and crackers	93.9	94.1	93.6	92.2	91.2	90.7
Distilled and malt liquors	105.5	108.9	106.8	105.8	106.0	101.9
Other beverages	113.2	120.8	125.7	130.3	137.8	143.5
Confectionery	83.0	87.6	90.8	89.2	88.7	89.0
Tobacco and tobacco products	88.6	89.0	91.2	99.1	96.2	90.2
Rubber products	109.6	114.3	110.4	99.5	106.2	101.0
Leather products	86.8	89.5	88.6	86.0	88.2	83.8
Boots and shoes (except rubber)	89.6	92.5	92.9	91.4	94.8	91.2
Other leather products	81.8	84.0	80.8	76.2	76.3	71.0
Textile products (except clothing)	85.4	86.8	84.4	77.5	78.8	77.1
Cotton yarn and broad woven goods	86.4	88.2	83.7	75.6	72.4	68.2
Woollen goods	71.7	74.4	70.2	58.8	60.6	62.3
Synthetic textiles and silk	87.5	85.5	85.3	79.8	82.7	83.8
Clothing (textile and fur)	91.9	94.0	94.2	90.7	92.4	89.9
Men's clothing	96.4	100.8	100.2	93.1	93.0	90.3
Women's clothing	92.3	92.6	94.6	95.8	97.2	96.4
Knit goods	80.5	81.6	81.0	76.3	78.4	73.1
Fur goods	74.7	69.5	69.6	67.8	70.0	66.2
Wood products	107.3	110.3	105.5	102.6	103.5	103.2
Saw and planing mills	111.0	112.4	105.0	103.5	103.6	104.4
Furniture	106.0	111.8	112.5	109.2	112.6	110.7
Other wood products	93.0	98.6	94.6	85.7	85.6	82.9
Paper products	118.2	123.7	123.5	121.1	123.2	124.0
Pulp and paper mills	121.5	126.3	124.4	120.9	124.2	125.3
Other paper products	110.2	117.4	121.1	121.4	121.0	120.8
Printing, publishing and allied industries	111.8	115.3	119.6	119.1	121.3	123.8
Iron and steel products	102.9	112.4	113.4	102.6	109.7	106.1
Agricultural implements	66.6	58.9	59.9	63.8	78.2	69.1
Boilers and plate work	111.3	115.5	126.9	115.8	117.4	114.5
Fabricated and structural steel	127.7	153.7	174.6	159.2	163.0	153.3
Hardware and tools	102.6	107.3	97.8	91.5	99.5	100.0
Heating and cooking appliances	98.1	106.0	101.5	99.1	106.1	96.7
Iron castings	96.0	107.4	105.3	95.6	99.8	91.8
Machinery manufactures	108.7	122.4	124.7	107.1	107.1	105.8
Industrial machinery	..	..	134.6	113.2	116.6	116.1
Primary iron and steel	108.9	123.3	124.2	103.8	119.8	120.3
Sheet metal products	107.0	113.5	109.8	102.1	110.3	107.8
Wire and wire products	102.2	116.9	117.6	111.2	118.3	116.3
Transportation equipment	131.2	141.6	142.1	123.8	112.3	106.8
Aircraft and parts	328.9	352.0	391.2	366.0	263.6	243.4
Motor vehicles	121.8	134.4	124.9	102.0	106.0	104.3
Motor vehicle parts and accessories	111.9	120.1	112.9	100.4	107.1	103.6
Railroad and rolling-stock equipment	84.0	93.4	91.5	75.2	68.5	61.6
Shipbuilding and repairing	138.6	149.1	154.9	136.9	128.3	126.1
Non-ferrous metal products	125.3	132.5	128.3	122.3	126.3	129.2
Aluminum products	127.7	138.5	136.9	129.3	139.4	143.5
Brass and copper products	106.5	112.2	107.5	103.5	110.4	103.0
Smelting and refining	148.3	156.6	151.1	142.2	141.6	151.6

7.—Annual Average Index Numbers of Employment, by Industrial Division and Group, 1955-60—concluded

Industry	1955	1956	1957	1958	1959	1960
Manufacturing—concluded						
Electrical apparatus and supplies	137.4	152.2	150.4	135.7	135.8	133.1
Heavy electrical machinery	..	..	139.8	121.6	111.8	105.4
Telecommunication equipment	..	..	225.2	211.7	210.5	214.3
Non-metallic mineral products	123.6	134.0	132.2	133.2	143.1	140.0
Clay products	107.3	112.5	102.3	102.1	101.8	89.8
Glass and glass products	127.1	135.0	132.1	133.5	149.3	151.0
Concrete products	..	..	..	..	..	249.2
Products of petroleum and coal	125.6	133.5	140.0	139.7	138.5	137.5
Petroleum refining	..	..	..	141.8	140.7	140.3
Chemical products	122.2	127.7	133.5	131.2	129.4	132.3
Medicinal and pharmaceutical preparations	110.5	115.8	117.1	119.0	119.2	118.0
Acids, alkalies and salts	126.0	132.9	146.9	148.1	145.5	155.3
Other chemical products	124.3	129.7	134.5	130.7	128.4	130.8
Miscellaneous manufacturing industries	102.8	108.8	113.7	119.9	126.5	130.3
Construction	**115.0**	**131.8**	**135.7**	**126.2**	**130.3**	**125.7**
Building and general engineering	117.8	140.2	144.4	127.6	129.0	121.9
Building	120.2	145.5	147.7	130.1	136.5	128.6
General engineering	107.3	117.8	130.8	117.1	98.0	94.0
Highways, bridges and streets	110.5	118.4	122.0	124.2	132.3	132.0
Transportation, Storage and Communication	**110.8**	**118.3**	**120.4**	**115.5**	**114.3**	**111.1**
Transportation	105.9	111.9	111.8	105.0	104.5	101.4
Air transport and airports	170.5	184.8	190.7	187.3	192.9	211.4
Steam railways	103.4	109.0	107.7	97.7	95.6	89.5
Maintenance of equipment	107.3	111.2	106.9	92.6	87.0	77.8
Maintenance of ways and structures	91.7	101.6	102.2	93.5	93.9	84.8
Transportation—steam railways	106.2	110.7	108.5	98.5	96.0	91.7
Telegraphs	118.0	119.8	126.8	122.3	121.9	117.9
Water transportation	95.9	101.7	100.1	96.9	94.6	92.7
Electric and motor transportation	112.8	119.0	123.5	124.1	129.3	132.3
Urban and interurban transportation	89.0	87.5	86.5	84.4	82.3	82.0
Truck transportation	156.8	175.2	189.1	191.5	211.6	216.9
Storage	107.8	116.2	115.8	115.3	114.4	108.6
Grain elevators	104.5	107.8	104.2	104.9	103.2	100.1
Storage and warehouses	118.0	141.4	150.5	145.9	147.0	133.4
Communication	137.8	152.6	167.4	171.0	166.5	163.8
Radio broadcasting	215.7	265.7	294.2	307.1	319.6	339.6
Telephone	131.4	143.0	155.7	154.2	148.3	143.6
Public Utility Operation	**119.2**	**126.3**	**133.6**	**137.6**	**138.7**	**137.8**
Electric light and power	121.8	127.9	133.9	136.2	135.5	134.9
Other public utilities	105.6	118.2	132.6	143.8	152.0	149.3
Trade	**118.7**	**126.3**	**131.8**	**131.6**	**135.3**	**136.7**
Wholesale	120.7	128.0	133.2	131.8	134.8	136.1
Retail	117.7	125.4	131.0	131.6	135.6	137.1
Food	140.0	151.4	164.9	171.9	178.8	189.1
Department stores	105.6	112.4	114.6	113.9	117.4	118.8
Variety stores	111.4	119.1	126.9	125.9	129.2	129.7
Automotive products	146.2	156.3	166.0	160.8	164.9	166.1
Finance, Insurance and Real Estate	**132.1**	**137.1**	**145.0**	**149.3**	**153.2**	**156.7**
Banking, investment and loan	136.6	140.5	148.4	150.1	153.6	157.5
Insurance	123.8	129.3	137.1	145.1	149.7	152.4
Service	**115.0**	**125.1**	**131.9**	**135.1**	**139.3**	**143.2**
Hotels and restaurants	110.2	120.2	125.5	125.6	128.6	130.1
Laundries and dry-cleaning plants	105.0	110.0	114.0	115.0	113.3	114.1
Business service	..	..	..	..	245.9	246.1
Industrial Composite	**112.9**	**120.7**	**122.6**	**117.9**	**119.7**	**118.7**

8.—Annual Average Index Numbers of Employment by Province 1951-60, and Monthly Indexes 1959 and 1960

NOTE.—These indexes are calculated as at the last day of each month, on the base 1949=100.

Year and Month	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada
Averages—											
1951	111.7	112.6	100.3	109.0	109.2	110.4	103.9	106.0	112.4	106.1	109.1
1952	130.2	123.2	104.0	109.5	113.4	112.0	106.0	111.4	120.8	106.7	111.9
1953	140.4	115.5	101.0	100.8	112.4	114.5	107.0	116.2	128.5	108.2	113.1
1954	128.0	109.9	97.6	98.0	109.2	110.6	104.7	118.0	128.0	106.3	109.9
1955	131.1	114.2	97.1	103.5	112.5	113.5	105.2	117.0	133.0	111.9	112.9
1956	136.9	117.4	101.7	110.1	120.1	121.4	108.6	121.1	148.5	121.5	120.7
1957	130.1	115.2	100.2	103.8	121.5	124.3	110.9	125.3	152.2	123.9	122.6
1958	122.6	114.9	95.5	98.0	117.0	119.6	108.7	126.6	150.5	114.7	117.9
1959	125.8	126.3	96.3	101.7	118.5	121.3	112.2	130.0	155.0	115.1	119.7[r]
1960	129.7	128.5	95.5	103.4	118.6	119.2	111.0	126.0	153.3	114.7	118.7
1959—											
January	111.6	101.8	93.9	98.3	111.8	116.6	105.9	118.5	144.1	108.0	113.7
February	104.5	101.2	87.1	97.5	111.2	116.0	105.1	118.3	145.0	109.5	113.0
March	106.4	104.4	87.9	96.3	110.9	116.9	105.9	119.5	145.9	112.2	113.7
April	107.2	108.7	94.0	91.2	113.7	118.5	107.6	124.0	146.2	114.5	115.7
May	117.5	127.4	96.0	98.0	117.6	121.4	111.8	133.2	154.7	117.9	119.6
June	136.3	137.4	97.9	104.7	121.7	124.3	115.8	138.4	161.6	121.8	123.5
July	143.9	146.5	101.5	106.8	122.7	123.8	117.9	141.4	164.5	110.2	123.1
August	143.6	150.8	101.0	106.4	124.0	124.7	119.0	140.0	166.7	112.6	124.2
September	144.8	145.5	99.9	106.2	124.9	125.6	118.0	137.9	165.0	122.9	125.6
October	141.5	139.1	100.2	104.3	124.1	125.0	116.4	135.2	160.3	120.3	124.4
November	133.7	132.7	99.7	104.8	122.4	122.3	113.2	129.4	155.1	117.3	121.8
December	118.8	120.2	97.0	105.6	116.5	120.0	109.6	123.9	151.2	113.9	118.1
Percentage distribution, 1959[1]	1.4	0.2	3.1	2.3	28.4	42.5	5.0	2.5	5.8	8.8	100.0
1960—											
January	112.0	105.4	92.2	103.2	113.7	117.7	106.4	117.4	147.3	109.7	115.1
February	108.9	109.0	93.8	101.0	113.0	117.1	105.4	116.2	146.4	111.2	114.6
March	105.4	114.4	92.8	96.3	112.3	116.9	105.0	115.6	146.0	113.0	114.2
April	106.5	114.9	87.4	90.0	113.6	117.6	106.7	120.0	145.7	113.9	114.8
May	121.8	131.8	97.4	99.1	117.8	119.9	111.3	128.8	154.0	116.4	118.9
June	145.2	139.6	103.5	107.3	123.7	121.9	114.5	133.3	160.2	119.2	123.0
July	145.9	147.1	99.6	106.1	122.1	119.8	115.9	134.4	164.4	120.3	121.9
August	149.2	148.7	98.9	109.2	123.7	121.4	116.9	135.4	162.6	119.9	123.1
September	151.4	144.8	97.9	108.1	124.2	121.8	115.9	134.0	159.8	118.9	123.1
October	148.4	138.5	95.6	106.5	123.5	120.6	114.3	131.3	155.0	115.3	121.5
November	139.5	133.0	96.7	108.1	121.2	119.8	111.7	126.7	150.9	111.9	119.7
December	122.0	114.5	90.0	105.4	115.0	116.3	107.9	119.0	147.1	107.1	114.8
Percentage distribution, 1960[1]	1.5	0.2	3.1	2.3	28.7	42.0	4.9	2.5	5.8	9.0	100.0

[1] The proportion of employees reported in the provinces to the total reported by all employers making returns in Canada (12-month average).

9.—Annual Average Index Numbers of Employment by Metropolitan Area 1951-60, and Monthly Indexes 1959 and 1960

NOTE.—These indexes are calculated as at the last day of each month, on the base 1949=100.

Year and Month	Montreal	Quebec	Toronto	Ottawa-Hull	Hamilton	Windsor	Winnipeg	Vancouver[1]
Averages—								
1951	106.6	101.6	110.7	108.4	109.5	107.7	102.7	101.4
1952	110.9	105.2	113.3	108.9	109.2	107.0	104.0	100.1
1953	113.7	110.8	119.8	109.2	111.1	110.9	103.9	102.1
1954	110.7	110.5	120.1	109.9	103.6	91.5	103.4	102.6
1955	113.4	108.0	121.6	114.0	106.4	103.4	104.6	107.9

[1] Includes New Westminster from 1956.

9.—Annual Average Index Numbers of Employment by Metropolitan Area 1951-60, and Monthly Indexes 1959 and 1960—concluded

Year and Month	Montreal	Quebec	Toronto	Ottawa-Hull	Hamilton	Windsor	Winnipeg	Vancouver[1]
Averages—concluded								
1956	120.2	111.0	128.3	119.6	113.8	104.9	106.8	117.4
1957	124.6	110.8	132.1	120.3	114.4	95.9	107.7	120.4
1958	121.5	108.1	131.0	121.2	105.0	78.6	107.5	114.8
1959	123.3	110.4	131.3	124.9	112.0	79.3	111.3	116.0
1960	123.1	110.4	129.9	124.2	111.3	76.2	111.4	113.8
1959—								
January	118.2	103.3	129.1	118.8	105.8	72.6	106.1	112.5
February	118.2	103.9	126.4	118.6	106.2	78.4	105.7	112.9
March	119.2	106.7	127.7	118.8	107.3	79.1	106.8	114.3
April	122.6	109.1	129.1	121.0	110.5	80.7	108.2	116.2
May	123.9	110.8	131.0	125.2	112.7	82.1	110.5	118.1
June	124.9	112.9	133.0	127.0	114.6	84.6	113.1	120.1
July	124.2	114.3	132.2	126.7	114.5	78.9	113.9	110.2
August	125.7	115.5	133.0	128.3	114.5	74.5	115.2	112.8
September	127.0	115.1	134.3	130.2	116.4	80.9	115.9	121.2
October	127.5	113.6	135.0	129.8	116.3	82.0	115.6	119.3
November	126.9	111.9	134.4	127.9	113.8	78.1	113.7	118.2
December	121.9	107.9	130.7	126.1	111.2	79.2	111.1	116.8
Percentage distribution, 1959[2]	15.5	1.5	15.4	1.9	3.0	1.3	3.3	4.6
1960—								
January	120.1	105.2	127.9	120.5	110.4	79.1	107.7	113.1
February	119.6	105.9	127.6	119.0	111.4	78.9	106.7	113.2
March	120.2	106.4	127.8	118.7	112.1	78.2	106.4	113.8
April	122.3	109.4	128.9	121.1	112.6	77.9	108.5	114.3
May	123.7	112.1	129.9	125.2	114.5	79.1	111.7	115.0
June	125.8	115.9	131.2	128.4	114.1	79.4	113.6	116.2
July	124.0	114.3	129.7	128.3	112.6	65.5	114.2	116.9
August	124.7	114.2	130.9	127.6	111.8	75.3	115.5	116.0
September	125.5	112.6	131.4	127.0	111.4	76.4	115.0	115.0
October	125.8	111.5	131.9	126.5	111.1	75.4	114.4	112.4
November	125.0	109.9	132.3	126.2	109.3	74.5	112.8	110.8
December	120.7	107.1	129.2	122.1	104.5	74.3	109.8	108.7
Percentage distribution, 1960[2]	15.6	1.6	15.4	1.9	3.0	1.2	3.3	4.6

[1] Includes New Westminster from 1956. [2] The proportion of employees reported in metropolitan areas to the total reported by all employers making returns in Canada (12-month average).

Average Weekly Wages and Salaries.—Although per capita weekly earnings of workers in the industries and establishments surveyed monthly rose in 1960, the general gain of 3.2 p.c. over 1959 was below the average of the increases successively recorded in the postwar years. At $75.83, the latest figure was the highest on record, bringing the index (1949 = 100) to 176.5; the 1946 index had been 75.6 and the 1939 index, 54.6.

Higher wage rates in many industries and establishments were a factor in the upward movement in 1960, but substantial declines from 1959 and immediately preceding years in the number of workers involved in industrial disputes and in the resultant loss in working days also contributed.

All industry divisions and many of their components shared in the upward movement in weekly wages and salaries in 1960. In most cases, the percentage changes in the broad groups did not greatly differ from that shown in the industrial composite figure. The increases over 1959 in manufacturing and finance, insurance and real estate were fractionally smaller in percentage terms, while those in forestry, construction and the service industries surveyed were somewhat larger.

10.—Annual Index Numbers of Employment and Payrolls, together with Average Weekly Wages and Salaries, by Industry, Province and Urban Area, 1958-60

Industry, Province and Urban Area	Employment (1949=100)			Payrolls (1949=100)			Average Weekly Wages and Salaries		
	1958	1959	1960	1958	1959	1960	1958	1959	1960
Industry							$	$	
Forestry (chiefly logging)	75.9	78.9	84.0	136.0	141.3	157.5	71.74	71.63	74.85
Mining	123.5	123.4	120.1	207.9	217.6	218.8	86.60	90.76	93.80
Manufacturing	109.8	111.1	109.5	182.7	193.3	197.0	72.67	75.84	78.19
Durable goods[1]	114.8	115.5	112.6	190.6	201.1	202.5	77.93	81.67	84.20
Non-durable goods[1]	105.6	107.3	106.8	175.0	185.6	191.7	67.77	70.52	72.86
Construction	126.2	130.3	125.7	227.4	241.1	243.8	74.54	76.55	80.46
Transportation, storage and communication	115.5	114.3	111.1	179.9	189.4	190.1	74.72	79.65	82.32
Public utility operation	137.6	138.7	137.8	242.8	257.6	266.4	83.85	88.08	91.52
Trade	131.6	135.3	136.7	211.6	227.1	237.4	60.20	63.12	65.19
Finance, insurance and real estate	149.3	153.2	156.7	233.0	247.4	259.9	66.40	68.82	70.83
Service	135.1	139.3	143.2	221.0	236.1	253.3	48.23	50.27	53.08
Industrial Composite	**117.9**	**119.7**	**118.7**	**194.1**	**205.7**	**210.9**	**70.43**	**73.47**	**75.83**
Province									
Newfoundland	122.6	125.8	129.7	202.4	212.2	233.7	62.36	63.68	67.91
Prince Edward Island	114.9	126.3	128.5	175.1	209.5	216.3	51.15	54.75	55.00
Nova Scotia	95.5	96.3	95.5	148.6	154.6	160.0	58.33	60.17	62.65
New Brunswick	98.0	101.7	103.4	150.8	162.4	171.9	58.14	60.39	62.66
Quebec	117.0	118.5	118.6	192.7	203.6	211.6	67.69	70.56	73.00
Ontario	119.6	121.3	119.2	197.8	209.3	212.2	73.20	76.39	78.71
Manitoba	108.7	112.2	111.0	171.7	186.1	188.6	66.85	70.16	71.71
Saskatchewan	126.6	130.0	126.0	206.9	218.6	218.2	68.14	70.13	72.13
Alberta (including Northwest Territories)	150.5	155.0	153.3	246.4	263.9	268.9	72.88	75.63	77.83
British Columbia (including Yukon Territory)	114.7	115.1	114.7	190.7	202.1	209.3	75.88	80.09	82.97
Urban Area									
St. John's, Nfld.	126.0	135.5	131.4	199.3	221.8	226.7	50.98	52.78	55.31
Sydney, N.S.	90.8	87.2	88.2	140.3	135.6	142.7	72.62	73.03	75.62
Halifax, N.S.	114.4	117.0	117.8	182.6	194.7	203.6	57.19	59.73	62.03
Moncton, N.B.	97.9	99.8	99.1	148.9	158.4	162.1	55.55	57.55	59.31
Saint John, N.B.	95.6	101.5	106.6	143.5	160.9	184.5	54.00	56.87	61.58
Chicoutimi-Jonquière, Que.	..	110.1	115.8	..	193.2	214.8	..	87.51	92.28
Quebec, Que.	108.1	110.4	110.4	178.6	192.2	200.0	58.64	61.62	63.77
Sherbrooke, Que.	98.4	100.3	100.5	155.2	163.4	173.9	57.13	59.08	62.66
Shawinigan, Que.	102.7	100.0	105.8	170.5	173.0	191.0	76.91	80.12	83.10
Trois Rivières, Que.	113.2	116.5	112.0	176.9	192.2	191.8	64.07	67.66	70.10
Drummondville, Que.	73.7	77.3	76.1	111.6	121.0	123.6	58.72	60.26	61.10
Montreal, Que.	121.5	123.3	123.1	199.9	212.3	219.7	68.87	72.02	74.61
Ottawa, Ont.-Hull, Que.	121.2	124.9	124.2	198.3	215.0	222.2	64.49	67.87	70.46
Kingston, Ont.	112.8	110.4	112.2	191.4	194.9	209.0	67.72	70.29	73.99
Peterborough, Ont.	99.1	101.2	95.4	172.7	187.0	179.9	77.74	82.21	83.93
Oshawa, Ont.	166.1	171.0	170.8	263.4	290.4	304.1	79.73	85.06	89.02
Toronto, Ont.	131.0	131.3	129.9	218.7	227.1	231.8	73.96	76.57	78.98
Hamilton, Ont.	105.0	112.0	111.3	172.6	197.1	201.5	76.41	81.75	84.00
St. Catharines, Ont.	109.6	111.3	108.9	177.3	189.8	190.8	79.12	83.31	85.57
Niagara Falls, Ont.	108.3	101.2	99.9	180.5	172.3	175.0	75.57	76.72	78.70
Brantford, Ont.	87.1	90.7	81.2	132.6	144.9	132.6	66.68	69.93	71.39
Guelph, Ont.	118.2	126.1	121.4	193.6	214.2	211.2	66.20	68.28	70.18
Galt, Ont.	110.6	112.9	115.7	178.0	191.7	203.2	62.84	66.22	68.50
Kitchener, Ont.	113.7	121.4	121.4	183.4	208.0	214.4	65.64	69.66	71.74
Sudbury, Ont.	116.2	138.1	146.0	175.8	228.3	250.0	79.46	87.20	90.17
Timmins, Ont.	..	94.1	93.7	..	132.1	137.0	..	66.32	68.84
London, Ont.	119.7	123.8	123.9	196.3	212.8	220.9	66.52	69.56	72.07
Sarnia, Ont.	129.9	119.5	124.7	245.1	233.3	254.4	91.15	93.99	98.05
Windsor, Ont.	78.6	79.3	76.2	120.4	131.3	128.8	77.04	83.30	84.98
Sault Ste. Marie, Ont.	139.6	146.8	143.5	241.1	269.1	270.0	87.42	92.78	95.28
Fort William-Port Arthur, Ont.	115.2	111.8	108.0	184.4	186.1	189.2	71.57	74.35	78.07
Winnipeg, Man.	107.5	111.3	111.4	172.7	188.6	193.4	63.71	67.07	68.64
Regina, Sask.	122.6	132.7	131.3	206.0	231.8	238.4	64.23	66.89	69.68
Saskatoon, Sask.	131.9	136.3	138.3	223.4	240.1	249.3	63.81	66.35	67.71
Edmonton, Alta.	178.9	186.6	184.8	298.8	324.0	328.7	68.19	70.84	72.62
Calgary, Alta.	158.8	169.5	170.7	256.0	284.7	298.7	68.11	70.90	73.61
Vancouver, B.C.	114.8	116.0	113.8	196.1	209.2	212.0	74.63	78.89	87.42
Victoria, B.C.	115.6	113.4	110.7	190.8	195.7	199.3	68.73	71.76	74.69

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[1] The durable goods group includes wood products, iron and steel products, transportation equipment, non-ferrous metal products, electrical apparatus and supplies, and non-metallic mineral products; the non-durable goods group includes all other manufacturing industries.

11.—Annual Average Weekly Wages and Salaries by Industrial Group 1951-60, and Monthly Averages 1959 and 1960

Year and Month	Forestry (chiefly logging)	Mining	Manufacturing	Construction	Transportation, Storage and Communication	Public Utility Operation	Trade	Finance, Insurance and Real Estate	Service[1]	Industrial Composite
	$	$	$	$	$	$	$	$	$	$
Averages—										
1951	49.13	60.33	51.68	48.79	54.14	56.48	43.08	46.48	31.81	50.04
1952	55.84	65.79	56.36	55.82	56.81	62.00	46.08	49.35	34.23	54.41
1953	58.26	68.91	59.29	60.88	61.24	65.45	48.51	51.86	37.12	57.53
1954	59.89	70.67	61.15	61.15	62.76	67.87	50.73	53.93	38.91	59.04
1955	60.62	73.53	63.48	62.11	64.56	70.80	52.42	56.79	40.71	61.05
1956	65.40	78.01	66.71	68.58	67.29	74.39	54.64	60.29	42.93	64.44
1957	69.38	83.89	69.94	73.63	71.20	78.99	57.51	63.36	45.77	67.93
1958	71.74	86.60	72.67	74.54	74.72	83.85	60.20	66.40	48.23	70.43
1959	71.63	90.76	75.84	76.55	79.65	88.08	63.12	68.82	50.27	73.47
1960	74.85	93.80	78.19	80.46	82.32	91.52	65.19	70.83	53.08	75.83
1959—										
January	65.93	89.85	75.16	75.62	76.93	86.52	62.44	67.60	49.63	72.34
February	70.80	93.21	75.59	76.38	77.91	87.10	62.98	68.36	50.14	73.11
March	74.59	91.65	75.22	73.11	77.64	87.38	62.68	69.04	50.01	72.60
April	78.20	90.70	75.69	75.45	78.27	87.56	63.20	69.38	50.34	73.26
May	70.55	89.37	76.20	77.96	79.69	87.25	63.46	69.33	50.23	73.82
June	70.96	89.64	75.96	76.71	80.18	87.29	63.75	69.40	49.63	73.71
July	69.78	90.08	75.56	78.47	80.47	86.93	63.83	69.47	49.29	73.76
August	68.57	89.19	75.27	77.92	80.51	87.38	63.34	68.78	49.36	73.42
September	71.88	91.27	76.43	79.79	81.02	88.96	63.05	68.97	50.42	74.30
October	74.12	91.89	77.07	79.20	81.69	89.38	63.28	68.30	51.32	74.66
November	73.56	93.24	76.86	78.24	81.10	90.25	62.60	68.41	51.44	74.23
December	70.58	89.07	75.13	69.78	80.42	90.97	62.87	68.75	51.45	72.41
1960—										
January	69.68	92.56	77.90	80.49	81.21	91.42	64.48	69.04	52.20	75.13
February	73.53	94.20	77.68	80.13	81.67	90.71	65.05	69.41	52.62	75.35
March	73.41	94.35	78.04	80.40	80.40	90.38	64.94	69.87	52.73	75.37
April	84.95	94.22	78.40	79.86	82.59	91.06	65.14	70.61	53.58	75.98
May	71.96	93.86	77.80	77.58	82.14	90.35	65.39	70.79	52.96	75.36
June	74.20	94.13	78.23	78.25	82.40	89.92	65.70	70.96	52.50	75.74
July	72.82	92.58	78.18	83.17	83.40	91.69	65.66	70.93	52.15	76.28
August	72.57	92.62	77.62	83.36	82.67	90.54	65.53	71.11	52.32	75.94
September	76.12	93.62	78.37	84.27	82.67	92.16	65.47	71.84	53.29	76.55
October	77.19	93.90	78.95	82.86	82.83	92.83	65.01	71.60	53.99	76.60
November	76.98	94.57	79.16	81.46	82.92	93.29	64.67	71.76	54.34	76.43
December	74.74	94.96	77.92	73.71	82.95	93.92	65.24	72.02	54.26	75.18

[1] Mainly hotels, restaurants, laundries, dry-cleaning establishments and business and recreational services.

Subsection 3.—Hours and Hourly Earnings, 1960

Since the end of 1944, the monthly survey of employment and payrolls has also obtained, for wage-earners, statistics of hours worked and paid for during periods of absence with corresponding totals of gross wages paid to the wage-earners for whom records of hours are maintained. These are mainly hourly rated or production workers; the necessary information on hours is frequently not kept by employers for ancillary workers or, in many establishments, for any wage-earners. Salaried employees are excluded by definition from this series. In a number of industries, precise records of hours worked are lacking, with the result that data are available for fewer industries and workers than are covered in the employment and average weekly wage and salary statistics.

The questionnaire used in the monthly survey calls for entry of the gross wage payments in the reported pay periods, before deductions for income tax, unemployment insurance, etc. They include such items as payments for premium overtime work, shift differentials, production, incentive and cost-of-living bonuses where paid, as well as straight-time wages, including the earnings of wage-earners employed for only part of the pay periods covered by the monthly surveys.

The general movement of average hourly earnings and weekly wages has been upward throughout the postwar years while the work week has been shortened in most industries. An exception to the latter is the highway, bridge and street construction group in which average hours have risen since 1945 when labour and materials were in short supply. The changes from 1945 to 1960 are summarized in Table **12**.

Average earnings in manufacturing have shown notable advances in the period, particularly in the non-durable component. This is due in part to changes in the distribution of workers within that group, there having been unusually large increases in employment in certain relatively high-pay components such as oil refining, pulp and paper and printing and publishing, with greater stability or sometimes declines in several of the industries in which earnings tend to be below the divisional level.

12.—Changes in Average Hours and Earnings in Specified Industries, 1945 to 1960

Industry	Average Hours Worked			Average Hourly Earnings			Average Weekly Earnings		
	1945	1960	Change	1945	1960	Change	1945	1960	Change
	No.	No.	p.c.	$	$	p.c.	$	$	p.c.
Mining	43.9	41.7	− 5.0	0.85	2.09	145.9	37.40	87.26	133.3
Manufacturing	44.1	40.4	− 8.4	0.69	1.78	158.0	30.47	71.96	136.2
Durable goods	44.5	40.7	− 8.5	0.76	1.94	155.3	34.04	78.70	131.2
Non-durable goods	43.7	40.1	− 8.2	0.61	1.64	168.9	26.57	65.68	147.2
Construction—									
Building and structures	40.2	40.1	− 0.2	0.81	2.12	161.7	32.60	84.85	160.3
Highways, bridges and streets	36.7	41.0	11.7	0.63	1.63	158.7	23.19	66.89	188.4
Service	43.8	39.1	−10.7	0.43	1.04	141.9	18.92	40.58	114.5

Average hourly earnings in manufacturing generally rose in 1960 over 1959 by six cents to $1.78. The amount of the increase was the same as in 1959 over 1958 and the percentage gain, at 3.5, differed little. Both advances, however, were somewhat smaller than in most earlier years of the record. With a moderate decline in the length of the average work week, average weekly wages showed a rise of only 2.6 p.c., also a below-average gain. The hours reported averaged 40.4 per week compared with 40.7 a year earlier and 40.2 in 1958.

Average earnings in plants producing durable goods rose in 1960 by seven cents per hour, or 3.7 p.c. over 1959, and weekly wages by $2.04, or 2.7 p.c.; slight loss in working hours was responsible for the lower percentage change recorded in the latter. The work week averaged 40.7 hours compared with 41.0 in 1959. The 1960 figure, however, was a little above the 1958 level, when major industrial disputes had been a factor of some weight.

In the non-durable goods component, the 1960 increases over 1959 amounted to six cents, or 3.8 p.c., in hourly earnings and to $1.78, or 2.8 p.c., in weekly wages; the smaller rise in weekly wages reflected a slight decline in the weekly average of hours reported.

The percentage gain in the hourly average exceeded that in either 1958 or 1959 but was somewhat lower than in most other years for which data are available. All major groups within the light manufacturing division reported increases in average hourly earnings in 1960 over 1959. Higher wage rates were an important factor in the upward movement, notably in breweries, distilleries, tobacco plants, cotton and synthetic textiles, pulp and paper mills, printing and publishing, petroleum refineries and chemical plants.

The more important non-manufacturing industries for which information is obtained in this series also reported higher averages of hourly earnings in 1960. The figure for mining rose by 2.5 p.c.; with a minor gain in the hours per week, average weekly wages advanced by 2.9 p.c. In construction, the hourly earnings were higher by 5.4 p.c., a somewhat larger gain than in 1958 or 1959; weekly wages advanced by 5.7 p.c., the work week having been slightly longer in 1960 than in the preceding year. Wage rates moved up in a number of trades, notably for carpenters and electrical workers. Strikes were a factor of some importance in the construction industry, lowering employment levels during 1960. Pay rate revisions contributed to higher averages of hourly earnings in the service industries for which data on man-hours are available.

13.—Average Hours and Earnings in Specified Industries and Areas, 1958-60

Industry, Province and Urban Area	Average Hours Worked			Average Hourly Earnings			Average Weekly Earnings		
	1958	1959	1960	1958	1959	1960	1958	1959	1960
	No.	No.	No.	$	$	$	$	$	$
Industry									
Mining	**41.5**	**41.5**	**41.7**	**1.96**	**2.04**	**2.09**	**81.30**	**84.80**	**87.26**
Metal mining	41.8	41.7	41.9	2.03	2.13	2.17	84.77	88.73	90.89
Coal mining	39.0	38.6	39.7	1.73	1.74	1.75	67.43	67.00	69.36
Manufacturing	**40.2**	**40.7**	**40.4**	**1.66**	**1.72**	**1.78**	**66.77**	**70.16**	**71.96**
Durable goods[1]	40.3	41.0	40.7	1.80	1.87	1.94	72.42	76.66	78.70
Non-durable goods[1]	40.1	40.4	40.1	1.53	1.58	1.64	61.31	63.90	65.68
Construction	**40.7**	**40.2**	**40.4**	**1.78**	**1.84**	**1.94**	**72.36**	**74.20**	**78.41**
Buildings and structures	40.5	39.6	40.1	1.94	2.01	2.12	78.37	79.59	84.85
Highways, bridges and streets	41.0	41.2	41.0	1.48	1.56	1.63	60.80	64.28	66.89
Service	**39.5**	**39.4**	**39.1**	**0.97**	**1.00**	**1.04**	**38.28**	**39.29**	**40.58**
Hotels and restaurants	39.6	39.4	39.1	0.95	0.98	1.01	37.58	38.52	39.63
Laundries and dry-cleaning plants	39.6	40.1	39.8	0.96	0.97	1.00	37.94	38.98	39.83
Province									
Newfoundland	39.2	39.7	40.3	1.54	1.59	1.64	60.37	63.00	65.94
Nova Scotia	40.4	40.9	40.8	1.48	1.52	1.57	59.87	62.40	64.13
New Brunswick	41.4	41.6	41.4	1.45	1.50	1.55	59.99	62.33	64.21
Quebec	41.0	41.5	41.2	1.50	1.54	1.60	61.38	63.97	66.10
Ontario	40.0	40.6	40.3	1.74	1.82	1.87	69.70	73.79	75.52
Manitoba	40.1	40.4	39.9	1.56	1.65	1.67	62.66	66.52	66.67
Saskatchewan	39.3	39.6	38.9	1.78	1.86	1.90	70.15	73.68	74.02
Alberta	40.0	39.9	39.5	1.75	1.83	1.89	70.16	72.90	74.76
British Columbia	37.6	37.9	37.6	2.02	2.09	2.17	75.95	79.39	81.69
Urban Area									
Montreal	40.3	40.7	40.3	1.55	1.60	1.65	62.42	65.06	66.78
Toronto	40.1	40.5	40.1	1.72	1.75	1.80	68.89	70.74	72.06
Hamilton	39.7	40.6	40.1	1.93	2.06	2.14	76.50	83.66	85.70
Windsor	38.2	39.8	39.7	1.94	2.09	2.14	73.99	83.15	84.83
Winnipeg	40.1	40.5	40.0	1.54	1.63	1.66	61.91	65.93	66.51
Vancouver	37.4	37.9	37.2	1.97	2.04	2.12	73.72	77.36	78.93

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[1] The durable goods group includes wood products, iron and steel products, transportation equipment, non-ferrous metal products, electrical apparatus and supplies, and non-metallic mineral products; the non-durable goods group includes all other manufacturing industries.

Subsection 4.—Hours and Earnings in Manufacturing Industries*

Information obtained in an annual survey of earnings and hours in manufacturing relating to the last week of October supplements the monthly data dealt with in the preceding Subsections. Separate figures of hours and earnings of men and women wage-earners and salaried employees are obtained in each survey and additional information is collected periodically. Distributions of wage-earners in a given range of hours were compiled each year from 1946 to 1949 and every third year thereafter to 1961 (1958 statistics were given in the 1959 Year Book, p. 744). Percentage distributions of wage-earners and salaried employees by amounts earned in the survey week were obtained triennially from 1950 to 1959; the latest figures appear in Table **18**. Hours and earnings of clerical and related workers, given in Table **16** for 1959, were segregated from those for managerial, professional, supervisory and other salaried employees in 1951, 1954, 1957 and 1959.

The annual survey, like the monthly survey, is limited to establishments usually employing 15 or more persons and covers approximately 90 p.c. of all employees reported to the annual Census of Manufactures. Establishments are asked to report for all casual, part-time and full-time employees on their staffs in the survey week, excluding proprietors, firm members, pensioners, homeworkers, employees absent without pay throughout the week, and staffs in manufacturers' separately organized sales offices. Gross earnings for the week are required, including regularly paid bonuses, overtime pay and amounts paid for absences in the survey week. The reported hours comprise part-time, full-time and overtime hours worked and hours of paid absence. The general averages obtained are usually very similar to those derived from the corresponding monthly survey.

The annual survey reflects a continued upward movement in wages and salaries throughout the postwar period. Table **14** provides year-to-year comparisons of average earnings from 1950. In the decade, men's weekly wages rose by 55.5 p.c. and their salaries by 62.6 p.c. In the same period, women's weekly wages advanced by 50.0 p.c. and their salaries by 62.1 p.c. Because the general trend in working hours has been downward as a result of reductions in the standard work week and other factors, the increases in average hourly earnings of wage-earners have been proportionately greater than in weekly wages, the gains in 1959 over 1950 amounting to 64.9 p.c. for men and 54.1 p.c. for women.

Variations in the magnitude of the changes shown in the general and group averages and in the year-to-year comparisons are obviously related to varying economic and other conditions affecting the component industries in the survey periods, as well as to the industrial and, in some cases, the area distributions of the reported employees. Tables **15** and **16** show the 1959 averages of hours and earnings for wage-earners and salaried employees, respectively, for the provinces, the six largest metropolitan areas, the major industry groups and several important industries. It will be noted that women earn consistently lower average earnings than men in the same area or industry unit. This results not only from pay differentials and occupational differences, but also from such factors as a frequently shorter work week for women, a greater incidence of part-time work and absenteeism among them, their higher proportions of younger and less experienced workers, and their industrial distributions.

Salaried employees comprise increasing proportions of manufacturing staffs as a whole. Table **17** shows that the proportion of salaried employees has risen from 18.5 p.c. in 1950 to 23.6 p.c. in 1959. This trend is associated with developments in planning, administration and record-keeping which have increased requirements for professional and clerical personnel, and with changes in manufacturing processes which have frequently reduced employment for production workers per unit produced. Changes in industrial distributions of the employees reported also contribute to variations in the ratio of salaried personnel to wage-earners, which in any one period may be further influenced by seasonal, market and other conditions affecting levels of production. These usually cause sharper fluctuations in numbers of wage-earners than of salaried employees.

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* More detailed information is given in DBS annual report *Earnings and Hours of Work in Manufacturing* (Catalogue No. 72-204).

14.—Average Earnings of Male and Female Workers and Increases over the Preceding Year, Weeks Ended Oct. 31, 1950-59

(As reported by manufacturers usually employing 15 or more persons.)

Year	Men			Women			Both Sexes		
	Average Earnings	Increase over Preceding Year		Average Earnings	Increase over Preceding Year		Average Earnings	Increase over Preceding Year	
	AVERAGE HOURLY EARNINGS OF WAGE-EARNERS								
	$	$	p.c.	$	$	p.c.	$	$	p.c.
1950	1.14	0.07	6.5	0.72	0.04	5.9	1.06	0.08	8.2
1951	1.31	0.17	14.9	0.82	0.10	13.9	1.22	0.16	15.1
1952	1.40	0.09	6.9	0.86	0.04	4.9	1.30	0.08	6.6
1953	1.47	0.07	5.0	0.91	0.05	5.8	1.36	0.06	4.6
1954	1.51	0.04	2.7	0.93	0.02	2.2	1.40	0.04	2.9
1955	1.57	0.06	4.0	0.95	0.02	2.2	1.44	0.04	2.9
1956	1.66	0.09	5.7	1.00	0.05	5.3	1.53	0.09	6.2
1957	1.75	0.09	5.4	1.05	0.05	5.0	1.61	0.08	5.2
1958	1.80	0.05	2.9	1.08	0.03	2.9	1.65	0.04	2.5
1959	1.88	0.08	4.4	1.11	0.03	2.8	1.72	0.07	4.2
	AVERAGE WEEKLY WAGES								
	$	$	p.c.	$	$	p.c.	$	$	p.c.
1950	50.93	3.60	7.6	29.00	1.82	6.7	45.94	3.33	7.8
1951	56.46	5.53	10.9	31.27	2.27	7.8	51.32	5.38	11.7
1952	60.85	4.39	7.8	34.17	2.90	9.3	55.17	3.85	7.5
1953	62.71	1.86	3.1	35.07	0.90	2.6	56.75	1.58	2.9
1954	63.98	1.27	2.0	35.90	0.83	2.4	57.99	1.24	2.2
1955	66.86	2.88	4.5	37.52	1.62	4.5	60.53	2.54	4.4
1956	70.67	3.81	5.7	39.29	1.77	4.7	63.97	3.44	5.7
1957	72.21	1.54	2.2	39.49	0.20	0.5	65.31	1.34	2.1
1958	75.03	2.82	3.9	41.90	2.41	6.1	67.85	2.54	3.9
1959	79.20	4.17	5.6	43.36	1.46	3.5	71.35	3.50	5.2
	AVERAGE WEEKLY SALARIES								
	$	$	p.c.	$	$	p.c.	$	$	p.c.
1950	69.35	3.98	6.1	34.38	1.76	5.4	58.74	3.89	7.1
1951	77.55	8.20	11.8	38.42	4.04	11.8	65.98	7.24	12.3
1952	82.60	5.05	6.5	41.26	2.84	7.4	70.75	4.77	7.2
1953	86.43	3.83	4.6	43.13	1.87	4.5	73.87	3.12	4.4
1954	90.99	4.56	5.3	45.00	1.87	4.3	77.81	3.94	5.3
1955	93.50	2.51	2.8	47.02	2.02	4.5	80.57	2.76	3.5
1956	99.05	5.55	5.9	49.31	2.29	4.9	85.23	4.66	5.8
1957	104.63	5.58	5.6	51.84	2.53	5.1	89.92	4.69	5.5
1958	108.34	3.71	3.5	54.07	2.23	4.3	93.74	3.82	4.2
1959	112.78	4.44	4.1	55.73	1.66	3.1	97.10	3.36	3.6

15.—Average Hours and Earnings of Male and Female Wage-Earners for the Last Week of October 1959

Province, Metropolitan Area and Industry	Average Hours Worked			Average Hourly Earnings			Average Weekly Earnings		
	Men	Women	Both Sexes	Men	Women	Both Sexes	Men	Women	Both Sexes
	No.	No.	No.	$	$	$	$	$	$
Province									
Newfoundland	39.5	32.7	38.8	1.70	0.62	1.61	67.26	20.43	62.25
Nova Scotia	41.7	40.2	41.5	1.62	0.73	1.49	67.49	29.35	61.74
New Brunswick	42.8	38.3	42.1	1.54	0.80	1.43	65.72	30.53	60.43
Quebec	43.6	39.0	42.3	1.71	1.05	1.54	74.55	40.74	64.99
Ontario	41.8	39.2	41.3	1.98	1.18	1.82	82.58	46.35	75.10
Manitoba	41.6	39.0	41.0	1.81	1.04	1.64	75.34	40.55	67.34
Saskatchewan	41.5	39.7	41.3	1.83	1.27	1.77	76.13	50.33	72.86
Alberta	41.4	37.2	40.8	1.91	1.27	1.83	79.00	47.22	74.50
British Columbia	39.4	36.0	39.1	2.19	1.40	2.11	86.12	50.48	82.54
Canada	**42.1**	**38.8**	**41.1**	**1.83**	**1.06**	**1.58**	**77.12**	**41.17**	**64.77**
Metropolitan Area									
Montreal	42.8	38.6	41.4	1.81	1.12	1.60	77.50	43.10	66.28
Toronto	41.8	39.4	41.2	1.95	1.18	1.74	81.40	46.37	71.44
Hamilton	41.2	39.1	40.9	2.22	1.22	2.08	91.55	47.88	85.25
Windsor	40.9	39.0	40.7	2.22	1.46	2.14	90.62	56.80	87.16
Winnipeg	41.7	38.9	41.0	1.79	1.06	1.62	74.67	41.09	66.49
Vancouver	39.2	36.9	38.9	2.18	1.41	2.07	85.40	51.98	80.39
Industry									
Foods and beverages	42.7	38.1	41.4	1.67	1.09	1.53	71.54	41.52	63.24
Meat products	42.1	38.9	41.3	1.94	1.38	1.82	81.78	53.51	75.24
Canned and preserved fruits and vegetables	44.1	36.5	40.2	1.40	0.88	1.16	61.51	32.16	46.44
Bread and other bakery products	43.8	29.4	43.0	1.62	0.96	1.50	70.72	37.84	64.58
Tobacco and tobacco products	41.5	39.6	40.4	1.97	1.59	1.76	81.81	62.94	70.90
Rubber products	42.9	40.6	42.4	1.95	1.25	1.81	83.60	50.97	76.82
Leather products	40.2	39.0	39.6	1.40	0.96	1.20	56.34	37.27	47.57
Textile products (except clothing)	44.6	40.8	43.3	1.41	1.07	1.30	63.15	43.67	56.38
Cotton yarn and broad woven goods	42.6	39.4	41.5	1.35	1.18	1.30	57.63	46.62	53.87
Clothing (textile and fur)	41.0	38.3	38.9	1.53	0.99	1.13	62.73	37.69	43.88
Men's clothing	38.9	37.4	37.8	1.51	0.98	1.13	58.80	36.85	42.85
Women's clothing	39.0	36.8	37.2	1.83	1.05	1.20	71.47	38.86	44.59
Knit goods	45.2	41.1	42.2	1.32	0.94	1.05	59.62	38.48	44.19
Wood products	43.0	40.2	42.9	1.54	1.16	1.52	66.23	46.74	65.01
Saw and planing mills	42.4	40.1	42.3	1.62	1.30	1.61	68.60	52.23	67.96
Furniture	44.7	39.8	44.3	1.42	1.15	1.40	63.50	45.94	61.96
Paper products	42.1	39.8	41.9	2.09	1.15	2.00	88.19	45.97	83.82
Pulp and paper mills	41.9	37.3	41.8	2.17	1.33	2.16	90.92	49.75	90.07
Other paper products	43.2	40.3	42.3	1.79	1.13	1.58	77.31	45.32	66.79
Printing, publishing and allied industries	40.2	37.8	39.7	2.30	1.15	2.07	92.60	43.54	82.13
Iron and steel products	42.0	38.8	41.8	2.06	1.45	2.04	86.45	56.27	85.15
Iron castings	43.0	37.4	42.9	1.96	1.46	1.95	84.09	54.55	83.59
Machinery manufacturing	42.4	39.4	42.2	1.93	1.49	1.90	81.91	58.80	80.42
Primary iron and steel	41.4	36.5	41.4	2.41	1.96	2.40	99.69	71.76	99.46
Transportation equipment	40.7	38.0	40.6	2.04	1.55	2.03	83.12	58.93	82.22
Aircraft and parts	42.3	35.8	42.1	2.02	1.65	2.01	85.37	58.97	84.71
Motor vehicles	39.7	38.7	39.7	2.25	1.86	2.25	89.59	72.14	89.28
Motor vehicle parts and accessories	41.1	38.3	40.7	2.03	1.55	1.96	83.43	59.18	79.39
Railroad and rolling-stock equipment	39.4	--	39.4	1.94	--	1.94	76.36	--	76.32
Shipbuilding and repairing	41.1	38.8	41.1	1.95	1.00	1.94	80.15	38.95	79.57
Non-ferrous metal products	41.3	40.1	41.2	2.05	1.06	1.98	84.67	42.64	81.85
Smelting and refining	40.5	--	40.5	2.23	--	2.22	90.10	--	90.06
Electrical apparatus and supplies	42.0	39.6	41.3	1.94	1.40	1.78	81.53	55.34	73.27
Non-metallic mineral products	44.7	40.3	44.4	1.77	1.30	1.74	79.18	52.17	77.40
Products of petroleum and coal	41.1	--	41.1	2.42	--	2.41	99.39	--	99.13
Chemical products	41.5	39.0	41.1	2.02	1.19	1.89	83.86	46.52	77.49
Miscellaneous manufacturing industries	43.4	41.1	42.5	1.61	1.04	1.40	69.86	42.55	59.54
Averages, Durable Goods	**42.0**	**39.5**	**41.8**	**1.92**	**1.35**	**1.88**	**80.82**	**53.45**	**78.58**
Averages, Non-durable Goods	**42.2**	**38.8**	**41.1**	**1.83**	**1.06**	**1.58**	**77.12**	**41.17**	**64.77**
Averages, Manufacturing Industries	**42.1**	**38.9**	**41.4**	**1.88**	**1.11**	**1.72**	**79.20**	**43.36**	**71.35**

16.—Average Hours and Earnings of Male and Female Salaried Employees for the Last Week of October 1959

Province, Metropolitan Area and Industry	Salaried Employees						Clerical and Related Workers		
	Average Hours Worked			Average Weekly Earnings			Average Weekly Earnings		
	Men	Women	Both Sexes	Men	Women	Both Sexes	Men	Women	Both Sexes
	No.	No.	No.	$	$	$	$	$	$
Province									
Newfoundland	41.7	39.8	41.4	97.09	44.12	86.68	74.46	44.75	64.44
Nova Scotia	39.3	37.7	38.9	94.33	44.10	81.13	70.56	43.31	57.53
New Brunswick	41.1	38.9	40.5	92.27	43.59	78.23	67.96	43.05	56.19
Quebec	38.7	37.6	38.4	110.63	55.49	95.98	81.82	53.91	69.31
Ontario	38.8	37.5	38.5	116.08	56.90	99.04	86.93	55.72	71.43
Manitoba	38.8	37.6	38.5	97.44	47.82	84.26	71.78	46.99	59.53
Saskatchewan	39.1	38.6	39.0	95.26	50.97	82.13	70.88	50.58	60.22
Alberta	39.8	38.7	39.5	107.40	53.72	94.78	79.41	52.43	67.17
British Columbia	39.0	37.7	38.7	118.40	57.61	104.18	88.74	55.92	73.47
Canada	**38.9**	**37.6**	**38.5**	**112.78**	**55.73**	**97.10**	**84.04**	**54.44**	**69.91**
Metropolitan Area									
Montreal	38.2	37.4	38.0	114.70	58.28	98.90	84.01	56.50	71.40
Toronto	38.1	37.2	37.8	116.85	58.93	98.32	83.74	57.32	69.80
Hamilton	39.5	38.2	39.1	124.01	57.79	105.67	97.72	57.12	79.40
Windsor	40.6	37.9	40.0	128.30	69.04	114.58	106.56	68.47	92.76
Winnipeg	38.6	37.5	38.3	97.71	48.39	84.52	71.69	47.52	59.71
Vancouver	38.6	37.6	38.3	117.46	58.37	101.84	86.98	56.22	71.82
Industry									
Foods and beverages	39.5	37.7	39.0	102.10	53.41	88.91	77.29	52.67	65.20
Meat products	39.4	38.2	39.1	100.10	57.35	91.37	78.85	56.16	70.24
Canned and preserved fruits and vegetables	40.0	38.2	39.5	101.63	53.90	87.20	79.10	52.79	65.03
Bread and other bakery products	41.1	37.4	39.9	90.72	48.03	77.27	76.96	48.09	60.31
Tobacco and tobacco products	38.4	37.8	38.2	122.90	67.06	102.71	80.17	60.30	68.30
Rubber products	38.8	38.0	38.6	108.22	54.12	93.33	82.99	53.59	68.76
Leather products	40.1	37.3	39.1	93.05	47.53	77.85	73.77	46.30	58.92
Textile products (except clothing)	39.2	37.5	38.7	101.75	50.14	86.01	71.78	49.37	58.63
Cotton yarn and broad woven goods	39.2	37.8	38.7	94.83	47.29	80.46	82.07	47.74	62.50
Clothing (textile and fur)	39.9	37.8	39.0	96.55	52.63	77.56	67.65	49.53	55.87
Men's clothing	39.5	38.3	39.0	90.90	47.59	73.85	64.51	46.60	54.32
Women's clothing	39.7	37.7	38.7	100.09	59.55	80.63	70.08	55.75	60.00
Knit goods	40.9	38.1	39.7	97.06	48.11	75.85	68.11	45.62	51.86
Wood products	40.9	37.6	40.1	101.13	51.68	89.14	78.00	50.71	65.48
Saw and planing mills	41.7	38.7	41.1	101.85	51.75	91.88	80.38	51.10	68.58
Furniture	39.5	36.9	38.7	101.28	51.95	85.90	73.66	50.36	61.23
Paper products	37.7	36.7	37.4	130.55	59.72	112.95	89.36	58.89	75.63
Pulp and paper mills	37.8	36.9	37.6	140.51	62.80	123.45	93.08	62.03	80.02
Other paper products	37.4	36.5	37.1	108.85	55.41	92.56	82.22	54.53	68.37
Printing, publishing and allied industries	37.4	37.1	37.3	105.46	53.09	84.94	71.24	50.24	57.96
Iron and steel products	38.9	37.7	38.6	113.18	55.84	99.48	84.03	55.04	72.02
Iron castings	39.4	37.0	38.8	110.95	52.46	97.00	83.15	51.87	70.50
Machinery manufacturing	38.7	37.6	38.4	106.63	53.06	92.76	80.17	52.18	68.26
Primary iron and steel	39.5	38.3	39.3	131.93	63.97	118.06	92.49	63.56	79.55
Transportation equipment	39.3	38.4	39.1	118.06	62.02	106.21	95.48	61.68	83.81
Aircraft and parts	38.0	37.8	38.0	118.11	57.32	104.16	94.14	56.65	81.25
Motor vehicles	40.9	39.1	40.5	129.25	74.45	117.97	106.40	74.33	95.97
Motor vehicle parts and accessories	39.1	39.6	39.2	114.11	60.77	101.28	87.96	60.13	75.63
Railroad and rolling-stock equipment	39.7	38.8	39.6	109.87	64.69	104.46	84.29	64.53	79.02
Shipbuilding and repairing	39.0	36.5	38.5	105.74	48.26	94.68	90.13	48.28	77.84
Non-ferrous metal products	38.5	37.2	38.2	120.77	56.05	105.61	89.27	54.60	73.60
Smelting and refining	38.7	28.3	38.6	125.71	63.15	117.92	100.25	60.66	88.22
Electrical apparatus and supplies	39.0	38.6	38.9	115.31	57.96	100.46	93.42	56.99	78.01
Non-metallic mineral products	39.3	37.4	38.9	107.75	54.87	96.06	76.19	53.70	66.35
Products of petroleum and coal	36.8	36.1	36.6	143.55	65.62	126.60	88.84	62.16	76.95
Chemical products	38.0	37.5	37.8	121.19	58.82	103.01	78.64	56.96	66.15
Miscellaneous manufacturing industries	38.6	37.5	38.3	108.13	53.48	90.07	77.57	52.58	63.42
Averages, Durable Goods	**39.2**	**38.0**	**38.9**	**113.96**	**57.07**	**100.55**	**88.47**	**56.24**	**75.31**
Averages, Non-durable Goods	**38.5**	**37.4**	**38.2**	**111.58**	**54.79**	**93.93**	**78.24**	**53.09**	**64.49**
Averages, Manufacturing Industries	**38.9**	**37.6**	**38.5**	**112.78**	**55.73**	**97.10**	**84.04**	**54.44**	**69.91**

17.—Proportions of Reported Employees classified as Salaried Staff, 1950-59

Year	Durable Goods			Non-durable Goods			All Manufacturing		
	Men	Women	Both Sexes	Men	Women	Both Sexes	Men	Women	Both Sexes
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1950	14.4	40.8	17.5	19.9	18.2	19.3	16.9	23.4	18.5
1951	15.5	46.4	18.8	20.9	19.8	20.5	17.9	26.0	19.7
1952	16.4	46.1	19.6	22.1	19.2	21.1	18.9	25.6	20.4
1953	17.3	45.1	20.6	22.7	20.3	21.9	19.6	26.6	21.2
1954	19.2	47.6	22.6	24.2	21.1	22.2	20.6	27.8	22.2
1955	18.9	45.0	22.0	23.5	20.6	22.6	20.9	27.0	22.3
1956	19.4	47.5	22.8	24.1	20.9	23.0	21.4	27.8	22.9
1957	20.8	49.8	24.3	24.0	22.2	23.4	22.2	29.2	23.8
1958	21.9	48.6	25.0	24.7	22.2	23.9	23.2	28.7	24.4
1959	20.5	47.2	23.7	24.4	21.8	22.5	22.3	27.9	23.6

18.—Percentage Distribution of Employees, by Weekly Earnings, Week Ended Oct. 31, 1959

Range of Earnings	Durable Goods			Non-durable Goods			All Manufacturing		
	Men	Women	Both Sexes	Men	Women	Both Sexes	Men	Women	Both Sexes
	WAGE-EARNERS								
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Under $10	--	1	--	1	2	1	--	2	1
$ 10 to $19	1	2	1	1	6	3	1	5	2
20 to 29	1	6	1	2	18	7	1	16	4
30 to 39	2	16	3	4	24	10	3	23	7
40 to 49	4	20	6	7	23	12	6	22	9
50 to 59	7	20	9	11	14	12	9	15	10
60 to 69	14	18	15	15	9	13	14	10	14
70 to 79	21	12	21	18	3	13	20	5	17
80 to 89	21	4	19	15	1	10	18	2	14
90 to 99	12	1	11	10	--	7	11	--	9
100 to 109	7	--	6	6	--	4	7	--	5
110 to 119	4	--	3	4	--	3	4	--	3
120 to 129	2	--	2	3	--	2	2	--	2
130 to 139	1	--	1	1	--	1	1	--	1
140 to 149	1	--	1	1	--	1	1	--	1
150 or over	2	--	1	1	--	1	2	--	1
	SALARIED EMPLOYEES								
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Under $10	--	--	--	--	--	--	--	--	--
$ 10 to $19	--	1	--	--	1	1	--	1	--
20 to 29	--	2	1	1	3	1	1	3	1
30 to 39	1	8	3	2	11	5	1	10	4
40 to 49	2	22	7	4	24	10	3	23	8
50 to 59	4	28	9	6	27	12	5	27	11
60 to 69	6	20	9	8	18	11	7	19	10
70 to 79	9	11	9	10	9	10	9	10	9
80 to 89	11	5	9	11	4	9	11	4	9
90 to 99	12	2	10	10	2	8	11	2	9
100 to 109	12	1	10	10	1	7	11	1	8
110 to 119	10	--	8	8	--	5	9	--	7
120 to 129	8	--	6	6	--	5	7	--	5
130 to 139	6	--	4	4	--	3	5	--	4
140 to 149	4	--	3	3	--	2	4	--	3
150 or over	15	--	12	17	--	11	16	--	12

Section 4.—Wage Rates, Hours of Labour and Other Working Conditions

Statistics on occupational wage rates by industry and region or city and on standard weekly hours of labour are compiled by the federal Department of Labour and published in the annual report *Wage Rates, Salaries and Hours of Labour*. The statistics published are based on an annual survey covering some 23,000 establishments in most industries and apply to the last normal pay period preceding Oct. 1.

Average wage rates of time workers and average straight-time earnings of piece workers and other incentive workers in a given occupation are shown separately but are combined in the calculation of index numbers. Predominant ranges of rates for each occupation used are also given. Overtime pay is excluded.

The industry index numbers measure changes in wage rates for non-office employees below the rank of foreman. They do not, however, provide a basis for comparing the level of wages in one industry with that in another. More detailed information on concepts and methods of developing these statistics is given in the annual report.

19.—Index Numbers of Average Wage Rates for Certain Main Industrial Groups, 1950-59

(1949=100)

Note.—Indexes back to 1901 may be obtained from the Department of Labour publication *Wage Rates, Salaries and Hours of Labour 1959.*

Year	Logging	Coal Mining	Metal Mining	Manufacturing			Construction	Railways	Telephone	Personal Service	General Average
				Durable Goods	Non-durable Goods	All Manufacturing					
1950	97.0	102.8	106.8	106.6	105.6	106.1	104.8	105.1	104.8	102.9	105.5
1951	109.6	111.1	121.6	121.7	118.8	120.3	118.6	121.9	115.7	110.6	119.1
1952	133.3	124.0	130.1	130.2	126.5	128.4	128.6	136.8	128.4	117.6	127.7
1953	135.5	124.0	132.3	136.3	132.8	134.6	136.2	137.2	136.6	123.3	133.6
1954	138.0	123.5	136.7	140.0	136.9	138.5	140.0	137.8	147.6	128.6	137.9
1955	138.2	122.8	140.3	143.7	140.7	142.2	145.4	137.8	152.8	132.3	141.7
1956	160.8	123.6	150.8	151.2	148.3	149.8	150.7	146.8	157.6	136.1	148.7
1957	168.4	137.4	156.2	160.7	156.3	158.6	160.7	153.3	165.9	138.9	156.5
1958	172.0	147.6	160.8	166.1	162.2	164.2	171.0	153.3	175.4	143.5	162.6
1959	176.5	147.8	165.5	172.1	167.7	169.9	180.7	165.7	178.7	144.9	169.5

20.—Index Numbers of Average Wage Rates, by Industry, 1955-59

(1949=100)

Industry	1955	1956	1957	1958	1959
Logging	**138.2**	**160.8**	**168.4**	**172.0**	**176.5**
Eastern Canada	136.9	163.0	169.5	173.6	177.0
British Columbia, coastal	143.7	151.2	163.6	165.2	174.5
Mining	**134.9**	**142.4**	**150.4**	**156.7**	**160.0**
Metal mining	140.3	150.8	156.2	160.8	165.5
Gold mining	126.0	141.4	143.4	145.4	149.9
Other metal mining	149.1	156.6	164.1	170.3	175.0
Coal mining	122.8	123.6	137.4	147.6	147.8

20.—Index Numbers of Average Wage Rates, by Industry, 1955-59—continued

Industry	1955	1956	1957	1958	1959
Manufacturing	**142.2**	**149.8**	**158.6**	**164.2**	**169.9**
Foods and beverages	140.3	147.9	156.7	164.8	170.8
Slaughtering and meat packing	144.2	151.2	161.4	169.7	178.8
Dairy products	138.1	143.7	151.4	160.0	163.2
Canned and cured fish	125.8	135.6	140.8	146.1	152.7
Flour mills	155.6	158.7	166.7	174.2	182.8
Biscuits	149.4	156.5	168.9	177.9	182.6
Bread and other bakery products	139.4	150.0	159.1	168.3	172.5
Breweries	157.9	168.6	181.3	188.1	198.1
Confectionery	145.4	153.7	164.2	174.7	183.6
Tobacco, cigars and cigarettes	160.3	164.8	174.6	184.4	193.3
Rubber products	139.6	145.0	150.4	153.2	160.2
Leather products	134.5	143.8	151.5	155.2	161.6
Boots and shoes	134.2	144.6	151.5	154.2	161.3
Leather tanneries	135.8	140.5	151.3	159.2	162.6
Textile products (except clothing)	131.0	135.7	141.6	146.4	151.3
Cotton yarn and broad woven goods	131.5	138.6	143.0	145.8	151.0
Woollen and worsted woven goods and yarn	137.3	139.7	148.6	155.3	159.2
Synthetic and silk textiles	125.3	128.1	133.8	140.3	145.4
Clothing (textile and fur)	129.7	136.4	144.0	149.1	153.4
Men's clothing	134.7	143.4	150.4	155.7	158.6
Men's and boys' suits and overcoats	133.3	143.4	148.3	153.1	155.8
Men's fine shirts	136.8	137.8	151.3	160.6	168.2
Work clothing and sportswear	126.6	147.6	154.7	158.5	158.3
Women's clothing	121.2	125.0	133.1	136.9	144.2
Women's and misses' coats and suits	125.2	126.7	135.6	138.8	148.7
Women's and misses' dresses	118.8	123.9	131.6	135.7	141.4
Hosiery and other knitted goods	135.0	141.8	149.4	154.1	158.0
Fur goods	122.4	129.8	138.8	148.7	149.1
Wood products	136.4	142.9	152.6	155.6	161.3
Sash and door, and planing mills	138.0	144.4	152.8	157.1	160.0
Sawmills	138.1	144.6	155.5	156.8	163.2
Wooden furniture	131.1	137.5	145.2	151.6	157.5
Paper products	151.7	162.7	171.6	175.4	179.1
Paper boxes and containers	142.0	149.3	158.3	167.3	171.0
Pulp and paper	153.6	165.2	174.1	177.0	180.7
Pulp	150.9	162.0	171.2	174.7	178.6
Newsprint	151.8	162.7	170.8	173.4	177.4
Paper other than newsprint	155.1	165.3	175.8	177.7	183.8
Printing, publishing and allied industries	146.9	152.5	159.5	166.3	174.2
Printing and publishing other than daily newspapers	141.6	146.7	153.7	161.5	168.7
Daily newspapers	155.8	162.5	169.5	174.6	183.5
Iron and steel products	148.0	156.4	165.2	170.9	176.6
Agricultural implements	144.6	143.5	152.0	162.1	161.1
Heating and cooking apparatus	149.3	161.4	170.1	172.2	175.4
Household, office, store and industrial machinery	147.5	153.5	161.4	170.1	177.6
Iron castings	145.1	153.9	161.8	167.2	173.8
Machine shop products	150.4	156.3	164.2	169.2	180.1
Primary iron and steel	148.9	165.3	176.0	172.8[r]	185.6
Sheet metal products	150.8	157.9	166.2	172.2[r]	174.5
Transportation equipment	142.3	149.9	158.8	165.1	172.8
Aircraft and parts	158.3	163.6	169.9	178.4	182.8
Auto repair and garages	144.8	155.6	164.9	171.8	177.1
Motor vehicles	134.1	142.7	152.6	156.6	164.1
Motor vehicle parts and accessories	147.1	157.4	166.2	170.6	179.1
Railroad and rolling-stock equipment	137.1	140.2	148.7	155.6	168.3
Shipbuilding and repairing	144.6	148.0	157.1	164.1	171.7
Brass and copper products	149.4	153.7	166.0	175.3	179.1
Electrical apparatus and supplies	142.8	149.9	160.2	166.2	170.9
Heavy electrical machinery and equipment	143.3	148.9	158.5	166.3	168.3
Radio, television and other electronic equipment	138.8	145.3	150.0	159.6	162.5
Refrigerators, vacuum cleaners and miscellaneous electrical products	143.5	151.0	162.6	167.5	173.1
Clay products	149.2	161.0	170.7	173.5	178.0
Petroleum refining and products	154.0	164.0	176.1	178.4	185.2
Chemical products	150.3	160.2	169.4	177.3	183.0
Acids, alkalies and salts	153.2	164.2	175.1	184.1	190.5
Medicinal, pharmaceutical and toilet preparations	144.5	155.5	164.2	172.1	176.4
Paints, varnishes and lacquers	155.0	162.6	170.9	177.7	184.4
Durable goods[1]	143.7	151.2	160.7	166.1	172.1
Non-durable goods[1]	140.7	148.3	156.3	162.2	167.7

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[1] These groups are composites of the manufacturing groups listed above. Durable goods include wood products, iron and steel products, transportation equipment, brass and copper products, electrical apparatus and supplies and clay products; non-durable goods include all other manufacturing industries.

20.—Index Numbers of Average Wage Rates, by Industry, 1955-59—concluded

Industry	1955	1956	1957	1958	1959
Construction (buildings and structures only)	**145.4**	**150.7**	**160.7**	**171.0**	**180.7**
Transportation, Storage and Communication	**142.9**	**152.0**	**159.6**	**163.3**	**174.3**
Transportation	141.1	151.0	158.4	160.9	173.2
Railways	137.8	146.3	153.3	153.3	165.7
Urban and suburban transportation systems	143.5	153.3	158.8	171.2	180.3
Truck transportation	149.0	158.3	169.8	173.4	186.4
Water transportation	142.1	164.7	166.7	174.5	187.4
Storage (terminal grain elevators only)	148.0	154.7	163.1	174.3	183.2
Communication (telephone only)	152.8	157.6	165.9	175.4	178.7
Electric Light and Power	**158.1**	**169.7**	**179.2**	**192.5**	**200.6**
Trade	**142.2**	**146.2**	**153.5**	**160.1**	**168.4**
Wholesale trade	148.5	157.5	165.8	173.5	180.4
Retail trade	139.8	141.8	148.7	154.9	163.8
Personal Service	**132.3**	**136.1**	**138.9**	**143.5**	**144.9**
Laundries	134.0	140.9	148.5	157.6	162.4
Restaurants	132.0	135.3	137.2	141.0	141.8
General Index, All Industries	**141.7**	**148.7**	**156.5**	**162.6**	**169.5**

21.—Average Wage and Salary Rates for Selected Occupations in Montreal, Toronto, Winnipeg and Vancouver, Oct. 1, 1960

(Time work)

Industry and Occupation	Montreal	Toronto	Winnipeg	Vancouver
	$ per hr.	$ per hr.	$ per hr.	$ per hr.
Construction (buildings and structures only)—				
Bricklayer and mason	2.55	3.15	2.70	2.99
Carpenter	2.35	2.90	2.50	2.92
Electrician	2.45	3.40	2.75	3.26
Painter	2.25	2.51	2.20	2.84
Plasterer	2.65	3.20	2.70	2.85
Plumber	2.62	3.41	2.80	3.14
Sheet metal worker	2.35	3.42	2.40	2.92
Labourer	1.75	2.00	1.65	2.19
Truck driver	1.75	2.00	1.75	2.31
Urban and Suburban Transportation Systems—				
Operator[1]	1.91	2.12	2.04	2.27
Body repairman, bus	2.04	2.34	2.14	2.44
Repairman, trolley bus	2.03	2.17	2.09	2.44
Electrician, bus	2.05	2.28	2.14	2.44
Labourer	1.65	1.84	1.64	—
Mechanic, automotive	2.05	2.29	2.14	2.44
	per wk.	per wk.	per wk.	per wk.
Retail Trade—Grocery, Meat and Produce Stores—				
Checker-cashier, female	50.16	60.59	50.34	65.41
Produce clerk (fruit clerk), male	60.86	70.76	65.74	85.05
Meat cutter (butcher), male	71.07	83.94	70.10	97.62
	per hr.	per hr.	per hr.	per hr.
Manufacturing—				
General labourer, male	1.47	1.56	1.53	1.89
Maintenance Trades—				
Carpenter	2.03	2.13	2.07	2.49
Electrician	2.22	2.32	2.23	2.55
Machinist	2.15	2.23	2.01	2.54
Mechanic	2.05	2.17	1.99	2.48
Millwright	2.12	2.20	2.02	2.46
Tool and die maker	2.29	2.35	2.10	2.67
Welder	2.04	2.08	1.92	2.45

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[1] Maximum rates based on length of service.

21.—Average Wage and Salary Rates for Selected Occupations in Montreal, Toronto, Winnipeg and Vancouver, Oct. 1, 1960—concluded

Industry and Occupation	Montreal	Toronto	Winnipeg	Vancouver
	$ per wk.	$ per wk.	$ per wk.	$ per wk.
Office Occupations, Male—				
Bookkeeper, senior	94.09	94.10	88.55	103.28
Clerk, intermediate	73.28	74.54	67.40	83.92
Clerk, senior	93.56	93.63	84.50	107.33
Order clerk	75.47	78.80	62.67	85.10
Draughtsman, intermediate	89.54	84.42	80.30	90.24
Draughtsman, senior	109.76	104.92	102.87	111.74
Office Occupations, Female—				
Clerk, intermediate	61.35	61.27	49.04	59.70
Machine Operator—				
Bookkeeping	59.58	60.67	52.12	59.86
Calculating	55.54	57.96	52.83	57.67
Payroll clerk	58.68	61.03	51.82	60.13
Secretary, senior	78.58	76.31	65.50	74.78
Stenographer, senior	65.33	63.80	55.12	63.41
Stenographer, junior	55.71	57.50	43.86	50.46
Typist, senior	57.63	58.00	48.39	56.83
Typist, junior	48.15	50.12	42.09	48.24
Switchboard operator	55.04	56.10	46.65	51.32

22.—Average Standard or Normal Hours of Labour per Week for Employees in Selected Industries, by Province, 1955-59

Industry and Year	Atlantic Provinces[1]	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.
Work clothing 1955	44.0	43.1	40.7	40.0	..	..	40.5
1956	41.7	43.4	40.8	40.0	..	40.0	40.4
1957	42.0	42.4	41.0	40.0	..	40.0	40.0
1958	41.9	42.7	41.0	40.0	..	40.0	40.0
1959	42.0	41.9	40.5	40.0	..	40.0	40.0
Pulp and paper 1955	41.3	40.7	40.5	..	..	..	40.0
1956	41.3	40.7	40.6	..	..	..	40.0
1957	41.1	40.3	40.5	..	..	..	40.0
1958	41.1	40.2	40.2	..	..	..	40.0
1959	41.0	40.2	40.2	..	..	..	40.0
Wood products 1955	50.2	50.0	45.8	44.2	44.0	44.7	40.6
1956	50.1	50.0	45.4	44.2	44.0	44.8	40.3
1957	49.5	50.2	44.6	44.3	44.0	44.3	40.2
1958	49.4	49.6	44.6	43.8	44.0	44.1	40.2
1959	49.2	49.7	44.8	44.5	46.1	44.5	40.5
Meat products 1955	40.6	41.9	41.8	40.3	40.3	40.0	40.0
1956	40.4	41.6	41.9	40.2	40.2	40.0	40.0
1957	40.0	40.8	42.2	40.2	40.0	40.0	40.0
1958	40.0	40.7	42.2	40.1	40.0	40.0	40.0
1959	40.6	41.7	42.3	40.2	40.0	40.0	40.0
Iron and its products 1955	40.6	43.2	40.9	42.8	42.3	41.2	40.2
1956	40.4	43.0	40.8	41.2	41.0	41.5	40.1
1957	40.3	42.7	40.6	41.1	40.3	41.4	40.2
1958	40.2	42.7	40.5	41.2	40.2	40.9	40.2
1959	40.2	42.4	40.5	41.1	40.2	41.2	40.2
Woollen yarn and cloth 1955	43.8	46.5	44.7	40.3	..	..	42.3
1956	43.8	46.4	44.7	41.1	..	..	42.3
1957	42.3	46.7	44.5	..	..	..	..
1958	43.3	46.7	44.2	..	..	..	..
1959	43.4	45.5	43.6	..	..	..	..

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[1] Exclusive of Newfoundland.

Table **23** gives summary data on working conditions of plant and office employees in manufacturing industries for the years 1956 to 1960. The percentages in this table denote the proportions which employees—plant or office—of establishments reporting specific items bear to the total number of all such employees in all establishments replying to the survey; they are not necessarily the proportions of employees actually covered by the various items.

It will be noted that for the years 1956, 1957 and 1958 the number of establishments shown as having plant employees is identical with the number having office employees, while for 1959 and 1960 these numbers differ. The explanation is that in 1959 separate counts of establishments having plant workers and establishments having office employees were obtained, while in previous years counts of establishments were obtained without distinguishing between those with both plant and office employees and those with either one or the other only. Year-to-year differences in coverage for 1956, 1957 and 1958 are attributed to differences in rates of response or to the fact that all the establishments included in the survey did not necessarily operate in all years.

23.—Summary of Selected Working Conditions of Plant and Office Employees in Manufacturing Industries, 1956-60

Item		1956	1957	1958	1959	1960
		COVERAGE				
Plant Employees—						
Reporting establishments	No.	6,166	6,105	6,240	7,902	8,028
Employees	"	799,365	804,953	758,943	819,401	809,736
Office Employees—						
Reporting establishments	No.	6,166	6,105	6,240	7,658	7,732
Employees	"	204,881	224,941	226,973	229,233	234,618
		PERCENTAGES OF PLANT EMPLOYEES				
Standard Weekly Hours—						
40 and under		62	66	70	70	70
Over 40 and under 44		11	11	9	9	10
44		6	5	4	5	4
45		9	9	8	8	8
Over 45 and under 48		2	2	2	1	1
48		6	4	4	4	4
Over 48		4	3	3	3	3
Employees on a five-day week		86	88	88	89	90
Vacation with Pay—						
Two weeks with pay		92	95	95	94	86[1]
After: 1 year or less		*15*	*18*	*23*	*23*	*20*
2 years		*11*	*13*	*14*	*14*	*14*
3 years		*28*	*30*	*28*	*28*	*26*
4 - 5 years		*34*	*31*	*28*	*26*	*25*
Other periods		*4*	*3*	*2*	*3*	*1*
Three weeks with pay		63	68	73	71	72[1]
After: Less than 10 years		*1*	*1*	*4*	*5*	*6*
10 years		*3*	*5*	*8*	*8*	*11*
11 - 14 years		*1*	*2*	*4*	*4*	*4*
15 years		*47*	*51*	*50*	*47*	*45*
20 years		*6*	*5*	*4*	*3*	*2*
Other periods		*5*	*4*	*3*	*4*	*4*
Four weeks with pay		10	12	16	26	31[1]
After: 25 years		*7*	*10*	*12*	*22*	*25*
Other periods		*3*	*2*	*4*	*4*	*6*
Vacations that do not vary with length of service		[1]	[1]	[1]	[1]	12[1]
1 week		..	..	..	..	*5*
2 weeks		..	..	..	..	*7*

For footnote, see end of table, p. 754.

23.—Summary of Selected Working Conditions of Plant and Office Employees in Manufacturing Industries, 1956-60—concluded

Item	1956	1957	1958	1959	1960
	PERCENTAGES OF PLANT EMPLOYEES—concluded				
Paid Statutory Holidays	94	97	97	95	96[2]
1 to 5	*12*	*11*	*10*	*10*	*10*
6	*8*	*7*	*6*	*7*	*5*
7	*12*	*11*	*11*	*9*	*8*
8	*52*	*54*	*52*	*52*	*53*
9	*8*	*11*	*15*	*14*	*15*
More than 9	*2*	*3*	*3*	*3*	*3*
Pension and Insurance Plans—					
Pension plans	65	69	69	67	68
Group life insurance	87	89	90	88	87
Wage loss insurance	77	79	82	75	67
	PERCENTAGES OF OFFICE EMPLOYEES				
Standard Weekly Hours—					
Under 37½	22	23	26	27	27
37½	41	41	41	42	43
Over 37½ and under 40	10	9	10	9	8
40	21	22	19	18	18
Over 40	6	5	4	4	4
Employees on a five-day week	91	92	93	95	95
Vacation with Pay—					
Two weeks with pay	99	99	99	98	90[1]
After: 1 year or less	*90*	*91*	*89*	*89*	*79*
2 years	*5*	*5*	*6*	*6*	*7*
3 years	*1*	*1*	*1*	*2*	*1*
5 years	*2*	*1*	*2*	*1*	*2*
Other periods	*1*	*1*	*1*	..	*1*
Three weeks with pay	72	76	82	82	83[1]
After: Less than 10 years	*2*	*3*	*5*	*6*	*7*
10 years	*8*	*12*	*16*	*17*	*22*
11 – 14 years	*1*	*2*	*4*	*6*	*4*
15 years	*51*	*52*	*52*	*49*	*46*
20 years	*6*	*4*	*3*	*2*	*2*
Other periods	*4*	*3*	*2*	*2*	*2*
Four weeks with pay	13	16	20	32	37[1]
After: 25 years	*9*	*12*	*14*	*25*	*28*
Other periods	*4*	*4*	*6*	*7*	*9*
Vacations that do not increase with length of service	[1]	[1]	[1]	[1]	10[1]
1 week	..	..	..	..	*1*
2 weeks	..	..	..	..	*9*
Paid Statutory Holidays	99	100	98	99	99[3]
1 to 6	*4*	*4*	*4*	*5*	*4*
7	*10*	*10*	*9*	*8*	*7*
8	*61*	*61*	*58*	*58*	*60*
9	*17*	*20*	*22*	*23*	*22*
More than 9	*7*	*5*	*5*	*5*	*5*
Pension and Insurance Plans—					
Pension plans	78	81	83	82	81
Group life insurance	91	94	94	93	94
Wage loss insurance	58	63	63	54	39

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[1] Distinction between vacation policies providing for increasing vacation periods with increasing service and vacation policies providing for vacations of one stated period regardless of length of service was made for the first time in 1960; thus, in comparing 1960 figures with those for previous years, the percentages of employees granted vacations under both policies should be added.

[2] In 1960, respondents employing 2 p.c. of the total plant employees covered by the survey reported that they provided for paid statutory holidays for their employees but did not give the number of such holidays.

[3] In 1960, respondents employing 1 p.c. of the total office employees in manufacturing covered by the survey reported that they provided for paid statutory holidays for their employees but did not give the number of such holidays.

Wages of Farm Labour.—The information on farm wages is provided by volunteer farm correspondents located in all provinces except Newfoundland. The rates presented in Table 24 are average wages paid to all farm help regardless of age and skill. Because the rates reported may cover a wide range of skills, of types of work and of ages of hired workers, the value of the resulting data is considered to be as an indicator of trends rather than as a measure of absolute wage levels. No attempt has been made to have the wage rates reflect such perquisites as separate housing accommodation, fuel, electricity and food which, under some conditions of hiring, are supplied by employers to their hired farm help.

24.—Average Daily and Monthly Wages of Male Farm Help as at Jan. 15, May 15 and Aug. 15, 1956-60

NOTE.—Figures from 1940 are given in the corresponding table of previous Year Books beginning with the 1943-44 edition.

Province and Year	January 15				May 15				August 15			
	Daily		Monthly		Daily		Monthly		Daily		Monthly	
	With Board	Without Board	With Board	Without Board	With Board	Without Board	With Board	Without Board	With Board	Without Board	With Board	Without Board
	$	$	$	$	$	$	$	$	$	$	$	$
Maritimes—												
1956	4.60	5.60	90.00	117.00	4.70	5.70	96.00	119.00	5.00	5.80	102.00	125.00
1957	4.80	6.00	100.00	120.00	4.80	6.00	100.00	121.00	5.00	6.10	103.00	126.00
1958	4.90	5.70	93.00	129.00	5.00	5.80	98.00	130.00	5.00	6.00	98.00	131.00
1959	4.90	5.90	98.00	127.00	5.00	5.90	103.00	129.00	4.90	6.10	104.00	138.00
1960	5.00	6.00	101.00	134.00	5.00	6.40	105.00	134.00	5.10	6.20	102.00	138.00
Quebec—												
1956	4.70	5.90	92.00	123.00	5.10	6.30	100.00	135.00	5.50	6.80	108.00	147.00
1957	5.20	6.50	102.00	141.00	5.60	6.60	108.00	145.00	5.80	7.20	113.00	145.00
1958	5.30	6.80	103.00	139.00	5.60	6.90	106.00	146.00	5.60	7.30	115.00	149.00
1959	5.60	7.00	106.00	145.00	5.50	6.90	110.00	147.00	6.10	7.30	117.00	156.00
1960	5.70	7.10	107.00	148.00	5.80	7.10	111.00	152.00	6.00	7.40	120.00	160.00
Ontario—												
1956	5.20	6.60	86.00	126.00	5.50	6.80	96.00	131.00	6.00	7.60	104.00	138.00
1957	5.50	7.10	98.00	139.00	5.70	7.00	104.00	143.00	6.20	7.80	105.00	141.00
1958	5.60	7.10	101.00	139.00	5.90	7.40	106.00	145.00	6.10	8.00	105.00	143.00
1959	5.70	7.20	105.00	143.00	6.10	7.50	113.00	154.00	6.40	8.10	116.00	156.00
1960	5.90	7.60	110.00	155.00	6.30	8.10	117.00	156.00	6.20	8.40	116.00	162.00
Manitoba—												
1956	4.60	6.80	78.00	116.00	5.50	6.90	110.00	148.00	6.40	7.70	116.00	151.00
1957	5.20	7.20	82.00	123.00	5.80	7.40	118.00	151.00	6.80	8.20	121.00	146.00
1958	5.40	7.00	91.00	126.00	6.30	7.80	126.00	155.00	6.50	8.20	124.00	157.00
1959	5.30	6.80	92.00	127.00	6.10	7.40	128.00	155.00	7.10	8.40	133.00	161.00
1960	5.30	6.90	93.00	132.00	6.20	8.00	133.00	160.00	7.00	8.40	136.00	167.00
Saskatchewan—												
1956	4.70	6.40	77.00	115.00	5.80	6.90	120.00	150.00	6.60	8.20	127.00	159.00
1957	5.10	6.70	82.00	112.00	6.40	7.60	131.00	166.00	7.30	8.90	135.00	168.00
1958	5.10	6.90	91.00	125.00	6.50	7.80	137.00	169.00	7.30	8.90	137.00	168.00
1959	5.50	7.10	97.00	131.00	6.50	8.00	140.00	170.00	7.30	8.70	142.00	178.00
1960	5.70	7.40	98.00	138.00	6.70	8.60	143.00	181.00	7.30	9.20	147.00	184.00
Alberta—												
1956	5.00	6.60	94.00	130.00	6.30	7.70	122.00	160.00	6.60	8.00	123.00	157.00
1957	5.40	6.80	101.00	137.00	6.40	8.00	130.00	166.00	6.70	8.20	127.00	164.00
1958	5.60	7.00	109.00	143.00	6.50	8.40	132.00	171.00	7.30	8.70	132.00	159.00
1959	5.60	7.30	112.00	152.00	6.60	8.50	138.00	176.00	7.10	8.50	144.00	183.00
1960	6.30	8.00	119.00	167.00	7.10	8.80	142.00	180.00	7.10	8.80	144.00	180.00
British Columbia—												
1956	6.20	8.00	101.00	147.00	6.60	7.90	115.00	154.00	7.60	8.50	120.00	165.00
1957	7.20	8.40	118.00	171.00	6.60	8.50	127.00	182.00	7.30	8.50	121.00	178.00
1958	7.10	8.30	122.00	179.00	7.20	9.00	134.00	186.00	7.40	9.30	130.00	185.00
1959	7.00	8.80[r]	128.00	186.00	7.60	9.70	138.00	193.00	7.20	9.40	139.00	195.00
1960	7.30	9.10	132.00	201.00	7.40	9.50	139.00	196.00	7.20	9.10	146.00	200.00
Totals—												
1956	**4.80**	**6.10**	**86.00**	**123.00**	**5.30**	**6.50**	**109.00**	**143.00**	**5.80**	**7.10**	**115.00**	**150.00**
1957	**5.20**	**6.50**	**96.00**	**134.00**	**5.60**	**6.90**	**118.00**	**156.00**	**6.10**	**7.50**	**118.00**	**153.00**
1958	**5.30**	**6.60**	**101.00**	**139.00**	**5.80**	**7.10**	**118.00**	**156.00**	**6.00**	**7.60**	**120.00**	**154.00**
1959	**5.40**	**6.80**	**106.00**	**144.00**	**5.80**	**7.20**	**123.00**	**159.00**	**6.30**	**7.70**	**128.00**	**167.00**
1960	**5.50**	**7.00**	**111.00**	**155.00**	**5.90**	**7.50**	**128.00**	**165.00**	**6.20**	**7.80**	**129.00**	**169.00**

Section 5.—Unemployment Insurance*

During the depression of the 1930's the need for a nationwide scheme of unemployment insurance became recognized. In 1935 the Employment and Social Insurance Act was passed by the Federal Parliament but was subsequently declared invalid by the Privy Council. Later, by consent of the provinces, an amendment to the British North America Act was obtained empowering the Federal Parliament to legislate on unemployment insurance and in 1940 the Unemployment Insurance Act was passed, making provision for a compulsory contributory unemployment insurance scheme and also for the establishment of a national employment service to operate in conjunction with and ancillary to the unemployment insurance operations carried on under the Act. The Act, which came into effect on July 1, 1941, was later amended on several occasions and was replaced by a new Unemployment Insurance Act passed on July 1, 1955 and effective Oct. 2, 1955.

Legislation provides for compulsory coverage of some four-fifths of all non-agricultural employees under an insurance program administered by the Federal Government, and requires employers to join with their insurable employees and the Government in building up a fund. This fund is held in trust by the Unemployment Insurance Commission for the payment of benefits to unemployed insured persons. The Act is administered by a Commission of three persons appointed by the Governor in Council, of whom one is the Chief Commissioner; one Commissioner, other than the Chief Commissioner, is appointed after consultation with employer organizations and the other after consultation with employee organizations.

The Unemployment Insurance Act applies to all persons employed under a contract of service, except the following: employment in specified industries or occupations such as agriculture, horticulture and forestry (effective Jan. 1, 1956, coverage was also extended to certain employments in these three industries); the Canadian Armed Forces; the permanent public service of the Federal Government; provincial government employees except where insured with the concurrence of the government of the province; certified permanent employees of municipal or public authorities; private domestic service; private-duty nursing; teaching; certain director–officers of corporations; workers on other than an hourly, daily or piece rate earning more than $5,460 a year effective Sept. 27, 1959, unless they elect to continue as insured persons; employees in a charitable institution or in a hospital not carried on for purpose of gain except where the institution or hospital consents to insure certain groups or classes of persons with the concurrence of the Commission. All persons paid by the hour, day, or at a piece rate (including a milage rate) are insured regardless of amount of earnings, together with all employees who receive $5,460 or less at weekly, monthly, yearly or commission rates.

Under the Canadian Unemployment Insurance Act, benefit payments are made out of a Fund derived from moneys provided by Parliament and from contributions by insured employed persons and their employers. The amount of the employee contribution is determined by his weekly earnings and, since 1950, an equal contribution is required from the employer. Federal Government participation amounts to one-fifth of the aggregate employer–employee contribution. In addition, administrative costs are assumed by the Federal Government. Contributions became payable on July 1, 1941, and by Mar. 31, 1960 a total of $2,837,000,000 had been provided from these three sources; accruals from investment over the period brought the net revenue to $3,103,000,000. Investment transactions, as authorized by an Investment Committee, are carried out by the Bank of Canada.

Benefits became payable on Jan. 27, 1942 and by Mar. 31, 1960 a total of $2,737,000,000 had been paid, the balance in the fund at that date being $365,900,000.

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* Prepared by the Unemployment Insurance Section, Labour Division, Dominion Bureau of Statistics; statistics of unemployment insurance are compiled and published by the DBS from material supplied by the Unemployment Insurance Commission.

Statistics of the Operation of the Act.—In order to assess the impact of changing economic conditions on the insurance scheme, provision is made for the collection of current operational data, such as claims filed and processed in a month, and weeks and amount of benefit paid. These data, as published monthly in the *Statistical Report on the Operation of the Unemployment Insurance Act* (Catalogue No. 73-001), are used for administrative purposes as well as public information regarding financial and other aspects of the scheme. The number of initial and renewal claims filed during a month provides an approximation of separations from insured employment during the period while the count of claimants reporting at the month-end is a valuable indicator of the extent to which claimants maintain contact with local offices of the Commission. During the year 1960 there were 2,700,000 claims filed at local offices. On the average, slightly over 518,000 persons were on claim at the end of each month and total payments amounted to $481,836,000. These figures compare with 2,428,000 claims, an average of 454,000 persons on claim at the end of each month, and benefit payments amounting to $406,097,000 during 1959. The average weekly payment in 1960, at $22.32 was slightly higher than the 1959 figure of $21.18. The higher average for 1960 resulted in part from the adoption of two new benefit classes as of September 1959, thus increasing the maximum weekly rate from $23 to $27 (from $30 to $36 for those with a dependant).

25.—Claims Filed, Claimants, Beneficiaries and Amount Paid, by Month, 1959 and 1960

Month	1959				1960			
	Initial and Renewal Claims Filed	Claimants at End of Month	Beneficiaries (Weekly Average)	Amount Paid	Initial and Renewal Claims Filed	Claimants at End of Month	Beneficiaries (Weekly Average)	Amount Paid
	'000	'000	'000	$'000	'000	'000	'000	$'000
January	318	785	653	58,652	307	783	620	54,345
February	221	796	673	58,076	240	814	677	62,586
March	230	767	763	65,868	284	823	733	74,845
April	207	611	640	59,965	215	715	733	61,768
May	134	279	486	40,446	166	364	561	52,206
June	107	221	197	18,157	128	296	276	26,842
July	122	226	165	14,531	140	294	226	19,703
August	102	210	155	13,123	150	280	211	21,357
September	115	202	155	13,371	140	280	223	21,186
October	151	251	160	13,766	178	330	226	20,651
November	279	418	210	17,479	304	485	273	26,584
December	442	686	362	32,661	448	754	403	39,766
Totals	**2,428**	**454**[1]	**385**[1]	**406,097**	**2,700**	**518**[1]	**430**[1]	**481,836**

[1] Average of month-end data.

In addition to the monthly data published on the operation of the Unemployment Insurance Act, annual tabulations are compiled regarding persons employed in insurable employment and benefit periods established and terminated. These data are published in the annual report on *Benefit Periods Established and Terminated under the Unemployment Insurance Act* (Catalogue No. 73-201). The data on the insured population in Table 26 were obtained from returns from the renewal of insurance books and contribution cards at June 1, 1958 and June 1, 1959. Included are persons contributing in insurable employment on those dates and persons on claim. The number insured at June 1, 1959 increased by 17,810 from the previous book renewal to 4,072,900. Unemployment insurance was extended to fishermen on Apr. 1, 1957. This coverage change is interesting since the majority of commercial fishermen in Canada are not wage-earners but sharesmen or lone workers. It was decided to treat as the "employer" the person who first acquires the catch from the person who does the actual fishing. In some instances this is his actual employer, in others it is the buyer of the catch, and in still others it is the person or organization that markets the catch for the fisherman. Fishermen were not considered for benefit until the 1957-58 seasonal benefit period.

26.—Persons Insured under the Unemployment Insurance Act, by Industrial Group and Sex, 1958 and 1959

NOTE.—Based on a 10-p.c. sample of contributors and claimants at June 1, 1958 and 1959.

Industry	1958		1959	
	Males	Females	Males	Females
	No.	No.	No.	No.
Agriculture	**6,530**	**900**	**8,150**	**1,470**
Forestry and Logging	**67,390**	**1,820**	**61,250**	**1,760**
Fishing, Hunting and Trapping	**7,890**	**120**	**6,640**	**80**
Mining, Quarrying and Oil Wells	**105,180**	**4,530**	**100,320**	**4,040**
Metal mining	62,770	1,690	61,290	1,300
Fuels	24,770	1,430	22,160	1,690
Non-metal mining	9,210	260	9,510	230
Quarrying, clay and sand pits	4,580	140	3,790	90
Prospecting	3,850	1,010	3,570	730
Manufacturing	**979,040**	**309,360**	**978,690**	**316,990**
Foods and beverages	130,030	47,560	129,770	45,990
Tobacco and tobacco products	3,910	5,670	4,060	5,610
Rubber products	14,550	4,770	16,060	4,390
Leather products	17,360	13,830	18,520	15,190
Textile products (except clothing)	38,460	22,590	40,320	23,460
Clothing (textile and fur)	30,190	74,430	32,250	79,300
Wood products	100,940	9,670	101,650	10,040
Paper products	79,040	13,320	76,710	13,740
Printing, publishing and allied industries	43,530	20,230	44,180	20,560
Iron and steel products	167,320	19,460	175,680	19,780
Transportation equipment	147,400	13,250	130,670	11,520
Non-ferrous metal products	49,180	7,480	50,390	8,200
Electrical apparatus and supplies	51,460	24,180	52,170	24,750
Non-metallic mineral products	34,930	4,180	35,630	4,450
Products of petroleum and coal	11,090	1,260	10,170	1,780
Chemical products	39,530	14,030	39,700	15,180
Miscellaneous manufacturing	20,120	13,450	20,760	13,050
Construction	**316,150**	**8,920**	**307,790**	**9,280**
General contractors	205,390	4,790	193,080	4,830
Subcontractors	110,760	4,130	114,710	4,450
Transportation, Storage and Communication	**326,810**	**63,580**	**308,720**	**62,330**
Transportation	287,830	21,200	269,800	21,480
Storage	13,420	1,770	14,740	1,910
Communication	25,560	40,610	24,180	38,940
Public Utility Operation	**40,070**	**7,030**	**40,360**	**7,790**
Trade	**420,070**	**261,610**	**436,570**	**262,750**
Wholesale	140,460	47,960	143,930	46,890
Retail	279,610	213,650	292,640	215,860
Finance, Insurance and Real Estate	**53,590**	**99,590**	**55,000**	**101,330**
Service	**298,440**	**227,270**	**306,820**	**231,870**
Community	24,480	30,900	24,090	31,630
Government	128,450	35,930	136,840	34,550
Recreation	14,620	7,590	14,970	6,990
Business	37,790	35,220	38,670	39,980
Personal	93,100	117,630	92,250	118,720
Unspecified	**8,610**	**2,550**	**16,340**	**3,660**
Claimants	**310,290**	**127,750**	**314,800**	**128,100**
Totals, All Industries	**2,940,060**	**1,115,030**	**2,941,450**	**1,131,450**

The following statement shows the current weekly rates of contribution and benefit that became effective Sept. 27, 1959, and those in effect from Oct. 2, 1955 until that date. The weekly contribution is based on actual earnings in the week irrespective of the number of days in which the earnings are obtained; the employer pays a like amount. The benefit rates are calculated on the average weekly contributions for the last 30 weeks in the 104 weeks preceding claim. A claimant must have, to qualify for regular benefit, at least 30 weekly contributions in the last 104 weeks prior to claim; eight weekly contributions since the start of the last preceding regular benefit period or in the last year prior to claim, whichever is the shorter period; and 24 weekly contributions since the start of the last preceding benefit period, or in the year prior to the claim, whichever is the longer period.

WEEKLY RATES OF CONTRIBUTION AND BENEFIT UNDER THE UNEMPLOYMENT INSURANCE ACT

Range of Weekly Earnings	Weekly Contribution	Range of Average Weekly Contributions	Weekly Rates of Benefit		Earnings not Deducted	
			Person Without Dependant	Person With Dependant	Person Without Dependant	Person With Dependant
	Effective Oct. 2, 1955					
	cts.	cts.	$	$	$	$
Under $9	8[1]	Under 20	6	8	2	2
$ 9 and under $15	16	20 and under 27	9	12	3	3
15 " " 21	24	27 " " 33	11	15	4	4
21 " " 27	30	33 " " 39	13	18	5	5
27 " " 33	36	39 " " 45	15	21	6	6
33 " " 39	42	45 " " 50	17	24	7	7
39 " " 45	48	50 " " 54	19	26	9	9
45 " " 51	52	54 " " 58	21	28	11	11
51 " " 57	56	58 to 60	23	30	13	13
57 or over	60					
	Effective Sept. 27, 1959					
	cts.	cts.	$	$	$	$
Under $9	10[1]	Under 25	6	8	3	4
$ 9 and under $15	20	25 and under 34	9	12	5	6
15 " " 21	30	34 " " 42	11	15	6	8
21 " " 27	38	42 " " 50	13	18	7	9
27 " " 33	46	50 " " 57	15	21	8	11
33 " " 39	54	57 " " 63	17	24	9	12
39 " " 45	60	63 " " 69	19	26	10	13
45 " " 51	66	69 " " 75	21	28	11	14
51 " " 57	72	75 " " 82	23	30	12	15
57 " " 63	78	82 " " 90	25	33	13	17
63 " " 69	86	90 or over	27	36	14	18
69 or over	94					

[1] A half stamp, except for fishermen.

The duration of regular benefit is related to the contribution history—one week's benefit for every two weeks' contributions in the past 104 weeks with a maximum of 52 weeks (36 weeks prior to Sept. 27, 1959). Disqualifications for benefit include: loss of work owing to a labour dispute in which the contributor is participating or directly interested; unwillingness to accept suitable employment; being an inmate of any prison or any institution supported out of public funds; refusal to attend a course of instruction or training if directed to do so; residence outside Canada unless otherwise prescribed. Disqualification of a claimant for a period not exceeding six weeks may be imposed if an employee is discharged by reason of his own misconduct or leaves the employment voluntarily without just cause or refuses suitable employment.

Seasonal benefit is payable in the period Dec. 1 to mid-May to certain claimants whose benefits have been exhausted or who have insufficient contributions to qualify for regular benefit. Prior to 1958 the period was Jan. 1 to mid-April. A temporary extension of six weeks to the seasonal benefit period was made in 1958.

Table 27 distributes by province persons establishing regular benefit periods, regular benefit periods terminated, average weeks paid and average dollar benefit paid on these terminations. A claimant establishes a *regular benefit period* when he submits his claim in the prescribed manner and proves he has fulfilled the minimum contribution requirements. The duration of benefit authorized, the weekly rate authorized and total entitlement are then calculated and the claimant's benefit may be drawn upon during successive intervals of unemployment. His benefit period terminates either when he has exhausted the amount authorized or when 12 months have elapsed since he established, whichever comes first. The number establishing benefit periods in 1959 decreased to 985,148 from 1,091,484 in 1958. The duration of paid benefit in 1959 averaged 13.5 weeks, compared with 14.3 weeks in 1958. Ordinary benefit paid averaged $298.90 on terminations in 1959, down from $313.87 on terminations in 1958.

27.—Persons Establishing Regular Benefit Periods, Benefit Periods Terminated, and Duration and Amount of Benefit Paid, by Province, 1958 and 1959

NOTE.—Based on a 25-p.c. sample.

Province	1958				1959			
	Persons Establishing Benefit Periods	Benefit Periods Terminated	Average Weeks Paid on Termination	Average Amount Paid on Termination	Persons Establishing Benefit Periods	Benefit Periods Terminated	Average Weeks Paid on Termination	Average Amount Paid on Termination
	No.	No.	No.	$	No.	No.	No.	$
Newfoundland	25,208	26,056	16.40	375.77	22,168	24,252	15.00	345.03
Prince Edward Island	4,476	4,848	15.61	302.67	4,536	4,408	15.38	294.73
Nova Scotia	49,228	45,700	15.03	309.30	41,316	47,532	14.77	321.20
New Brunswick	38,336	45,236	15.83	340.52	36,476	37,764	14.73	314,50
Quebec	337,560	356,400	14.70	318.23	312,408	324,796	14.53	319.60
Ontario	390,824	384,228	13.87	305.19	349,640	373,448	12.69	280.25
Manitoba	41,688	42,240	14,19	299.59	36,128	39,172	13.20	281.31
Saskatchewan	27,536	26,976	14.36	310.88	25,748	26,816	13.69	296.62
Alberta	55,040	54,140	12.76	287.44	49,044	51,264	12.12	270.69
British Columbia	121,588	135,924	14.01	323.76	107,684	116,596	12.96	296.19
Totals	**1,091,484**	**1,121,748**	**14.31**	**313.87**	**985,148**	**1,046,048**	**13.54**	**298.90**

Table 28 gives regular benefit periods terminated and average weeks paid, classified by the age of the claimant and by his occupation.

28.—Regular Benefit Periods Terminated and Duration of Benefit Paid, classified by Age of Claimant and Occupation, 1958 and 1959

NOTE.—Based on a 25-p.c. sample.

Age Group	1958		1959	
	Benefit Periods Terminated	Average Weeks Paid on Termination	Benefit Periods Terminated	Average Weeks Paid on Termination
	No.	No.	No.	No.
Age Group				
Under 20 years	52,576	13.50	41,888	12.52
20 — 24 "	197,536	13.68	178,600	13.04
25 — 34 "	324,348	13.54	309,824	12.83
35 — 44 "	223,988	13.63	215,444	12.78
45 — 54 "	167,856	14.30	158,196	13.48
55 — 64 "	96,636	15.84	89,540	15.10
65 or over	49,856	22.98	44,420	22.38
Unspecified	8,952	13.80	8,136	12.99
Totals	**1,121,748**	**14.31**	**1,046,048**	**13.54**

28.—Regular Benefit Periods Terminated and Duration of Benefit Paid, classified by Age of Claimant and Occupation, 1958 and 1959—concluded

Age Group or Occupation	1958		1959	
	Benefit Periods Terminated	Average Weeks Paid on Termination	Benefit Periods Terminated	Average Weeks Paid on Termination
	No.	No.	No.	No.
Occupation				
Managerial	8,220	16.02	8,244	15.50
Professional	9,484	15.23	10,948	13.83
Clerical	91,628	16.17	98,064	16.55
Transportation	109,088	14.20	97,912	13.20
Communication	8,100	18.64	9,212	18.36
Commercial	56,284	15.75	56,932	15.42
Financial	772	14.02	1,092	13.13
Service	84,100	16.93	86,596	16.19
Personal	*39,512*	*16.75*	*44,784*	*15.84*
Domestic	*31,400*	*16.34*	*29,140*	*15.78*
Protective	*11,676*	*19.40*	*10,820*	*18.97*
Other	*1,512*	*15.02*	*1,852*	*15.10*
Agricultural	6,868	15.16	6,352	14.50
Fishing, trapping and logging	66,660	14.56	42,672	13.16
Fishing and trapping	*1,680*	*16.52*	*1,392*	*13.26*
Logging	*64,980*	*14.51*	*41,280*	*13.16*
Mining	22,280	13.28	27,388	12.60
Manufacturing and mechanical	245,148	12.72	217,392	11.60
Electric light and power	16,724	14.26	15,512	13.60
Construction	143,300	13.38	138,244	12.51
Labourers	239,924	14.34	215,512	13.24
Unspecified	13,168	14.77	13,976	13.80

Table 29 gives the provincial distribution of persons establishing seasonal benefit periods in 1958 and 1959, average weeks paid and average benefits paid. The average duration of paid seasonal benefit was 11.20 weeks in 1958 and 10.52 weeks in 1959; the average benefit was $233.37 in 1958 and $221.43 in 1959.

29.—Persons Establishing Seasonal Benefit Periods, Duration of Benefit and Amount Paid, by Province, 1958 and 1959

NOTE.—Based on a 10-p.c. sample.

Province	1958[1]			1959[2]		
	Persons Establishing Benefit Periods	Average Weeks Paid	Average Amount Paid	Persons Establishing Benefit Periods	Average Weeks Paid	Average Amount Paid
	No.	No.	$	No.	No.	$
Newfoundland	28,280	13.59	287.19	26,370	12.63	258.88
Prince Edward Island	5,390	12.90	251.98	6,010	12.67	242.95
Nova Scotia	27,060	11.99	235.83	27,070	11.35	227.38
New Brunswick	32,980	11.97	248.51	33,050	11.50	233.23
Quebec	152,840	10.94	228.14	149,830	10.35	220.94
Ontario	123,450	10.90	223.90	112,190	10.05	208.74
Manitoba	18,480	10.59	217.33	15,870	9.96	207.33
Saskatchewan	13,950	10.76	225.26	12,280	10.06	212.68
Alberta	17,850	9.99	215.41	17,100	9.57	207.80
British Columbia	50,210	11.04	243.54	44,540	10.21	230.28
Totals	**470,490**	**11.20**	**233.37**	**444,310**	**10.52**	**221.43**

[1] Dec. 1, 1957 to June 28, 1958. [2] Dec. 1, 1958 to May 16, 1959.

Employment Service.—The Unemployment Insurance Commission operates a free employment service under authority of the Unemployment Insurance Act. The public employment offices, which had functioned under a joint federal–provincial arrangement for more than two decades, were taken over by the Commission on Aug. 1, 1941, and additional offices were established in all provinces except Quebec. The Commission established its own offices in Quebec and the provincial government thereupon reduced the number of its offices.

30.—Applications for Employment, Positions Offered and Placements Effected by Employment Offices 1950-59, and by Province, 1958 and 1959

Note.—Figures by province from 1920-57 are given in the corresponding table of previous Year Books beginning with the 1926 edition. Totals for 1920-37 are given in the 1938 edition, p. 766; for 1938 in the 1939 edition, p. 802; for 1939-48 in the 1951 edition, p. 686; and for 1949 in the 1960 edition, p. 790.

Year and Province	Applications Registered		Vacancies Notified		Placements Effected	
	Males	Females	Males	Females	Males	Females
	No.	No.	No.	No.	No.	No.
1950	1,500,763	575,813	800,611	363,711	559,882	230,920
1951	1,541,208	623,467	943,773	387,795	655,933	262,305
1952	1,781,689	664,485	865,152	444,926	677,777	302,730
1953	1,980,918	754,358	822,852	466,310	661,167	332,239
1954	2,129,110	840,877	665,029	423,291	545,452	316,136
1955	2,161,081	829,741	797,917	435,056	642,726	310,850
1956	2,182,904	809,277	986,653	438,967	748,464	298,515
1957	2,714,759	938,704	720,798	398,740	586,780	290,924
1958	2,790,412	1,012,974	620,394	374,245	548,663	291,466
1959	2,753,997	1,037,536	753,904	421,927	661,872	324,201
Newfoundland 1958	70,759	5,621	3,378	1,159	2,353	747
1959	66,877	6,372	5,834	1,667	4,437	936
Prince Edward Island 1958	15,349	4,820	5,403	2,385	4,302	2,029
1959	16,761	5,456	5,820	2,933	4,574	2,519
Nova Scotia 1958	100,722	27,227	18,064	9,128	17,082	7,074
1959	100,461	28,078	20,546	10,240	19,043	7,955
New Brunswick 1958	108,970	27,684	16,966	7,953	16,599	6,199
1959	106,508	28,249	23,991	8,845	23,396	7,492
Quebec 1958	747,771	251,423	148,358	84,616	132,237	66,149
1959	752,043	263,248	188,002	96,170	165,084	74,347
Ontario 1958	1,006,625	386,594	233,348	127,003	206,905	98,131
1959	951,508	389,818	280,296	147,034	246,678	110,561
Manitoba 1958	124,209	58,538	39,941	24,727	34,277	19,175
1959	137,079	55,497	54,098	29,186	45,927	21,478
Saskatchewan 1958	85,185	35,423	27,551	15,098	24,697	11,139
1959	90,562	36,315	31,775	15,672	27,736	11,770
Alberta 1958	165,602	65,301	58,954	35,652	48,193	23,770
1959	171,033	68,116	66,632	36,611	56,832	24,828
British Columbia 1958	365,220	150,343	68,431	66,524	62,018	57,053
1959	361,165	156,387	76,910	73,569	68,165	62,315

Section 6.—Vocational Training*

The federal Department of Labour, under the authorization of the Vocational Training Co-ordination Act 1942, co-operates with the provinces in promoting and developing vocational training in Canada by sharing with the provincial governments the costs of establishing and operating various types of schools and training programs designed to fit trainees for employment.

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* More detailed information is given in the annual report *Canadian Vocational Training Branch*, published as a supplement to the annual report of the Department of Labour.

The federal–provincial program under which all classes and training projects are operated is known as 'Canadian Vocational Training'. In conducting this program, the Minister of Labour receives advice and co-operation from the Vocational Training Advisory Council which consists of representatives of provincial governments, employers, organized labour and other bodies concerned with vocational training in Canada. Problems regarding apprenticeship, including federal participation therein, are referred to the Apprenticeship Training Advisory Committee which reports to the Minister through the Council.

The established procedure is to have all training programs operated by or under the supervision of the appropriate provincial authority and to reimburse the provinces for provincial government expenditures in connection with such projects. Where classes or training programs are operated for Federal Government departments, the Armed Forces or other federal agencies, the provinces are reimbursed for the full costs; otherwise they are reimbursed for one-half of such expenditures subject to the limitation of funds voted for such purpose by Parliament.

There are three federal–provincial agreements governing the nature and extent of the sharable expenditures for different types of training: the Vocational and Technical Training Agreement No. 2, the Apprenticeship Training Agreement, and the Special Vocational Training Projects Agreement.

Vocational and Technical Training Agreement.—This Agreement which provides for the expenditure, over the five-year period that began Apr. 1, 1957, of $40,000,000 of Federal Government assistance to the provinces in the building, equipping and operating of vocational and technical schools, institutes and training centres, was signed by all provinces except Quebec. Of this amount, $25,000,000 is provided exclusively for assistance on capital projects, with preference being given to trade and technical institutes, although approved vocational high schools are also eligible to share. This capital appropriation is allotted to the provinces on the basis of population in the 15-19 age group. The remaining $15,000,000 is distributed by way of annual allotments to the provinces for sharing in operating costs of similar institutes and schools or, if desired, a province may claim as much as half of its annual allotment against capital costs of such institutions. The Agreement provides for annual allotments totalling $2,500,000 in each of the first two years of operation, $3,000,000 in the third year, and $3,500,000 in both the fourth and the fifth years. The annual allotments consist of initial allotments of $30,000 to each province and $20,000 to each of the Yukon and Northwest Territories, the remainder being allotted on the basis of population in the 15-19 age group. Federal expenditure under this Agreement for the year ended Mar. 31, 1960 was $5,139,481.

Apprenticeship Training.—Apprenticeship agreements covering a ten-year period commencing Apr. 1, 1944 were signed by all provinces except Quebec and Prince Edward Island. Newfoundland signed an agreement in 1950 for the remainder of the 1944-54 period. These agreements were renewed for a further ten-year period expiring on Mar. 31, 1964. They provide for sharing, on a 50-50 basis, in provincial government expenditures on the training of indentured apprentices who are registered with the provincial Departments of Labour under the provisions of the apprenticeship Act of each province. Training is provided on the job and in specially organized classes which may be conducted on a full-time basis during the day or as part-time day or evening classes. As of Mar. 31, 1960, a total of 19,962 apprentices had been registered. Federal Government expenditures for this purpose for the year ended Mar. 31, 1960, were as follows:—

Province	*Payment*
	$
Newfoundland	64,241
Nova Scotia	88,896
New Brunswick	94,254
Ontario	498,687
Manitoba	88,491
Saskatchewan	142,642
Alberta	471,097
British Columbia	341,925
Northwest Territories	264
TOTAL	1,790,497

Special Vocational Training Projects.—Agreements have been in operation since 1939 which provide for sharing with the provinces the costs of various types of training projects, other than those regularly conducted in schools assisted under the provisions of the Vocational and Technical Training Agreement No. 2 and programs of Apprenticeship Training. These Agreements are now consolidated under the Special Vocational Training Projects Agreement, effective from Apr. 1, 1959 until Mar. 31, 1964, except that the provision for sharing the costs of financial assistance to university students and nurses-in-training is subject to renewal on a year-to-year basis. The conditions governing financial assistance to the various types of projects are set forth in schedules attached to and forming part of the Agreement. These schedules cover special training classes for members of the Armed Forces and training programs arranged by the provinces for employees of Federal Government departments, the costs of which are borne entirely by the federal treasury. In addition, the costs of the following types of classes are shared equally by the federal and provincial governments: training for unemployed persons who require such training to fit them for employment; rehabilitation training for disabled persons; short-term classes for employment in primary industries; training programs for supervisors in industrial establishments; and preparation, printing and revision of vocational correspondence courses made available by the provinces to students anywhere in Canada on the same terms as to students in the province where the course has been prepared. In the year ended Mar. 31, 1960, federal expenditures of $1,201,491 were made toward programs now covered by the Special Vocational Training Projects Agreement.

Section 7.—Industrial Accidents and Workmen's Compensation

Subsection 1.—Fatal Industrial Accidents

Statistics of fatal industrial accidents have been compiled by the federal Department of Labour since 1903. The data are now obtained from provincial Workmen's Compensation Boards, the Board of Transport Commissioners and other government authorities, and from press reports.

31.—Fatal Industrial Accidents, by Industry, 1956-59

Industry	Numbers				Percentages of Total			
	1956	1957	1958	1959	1956	1957	1958	1959
Agriculture	106	92	97	101	7.3	6.6	7.6	7.6
Logging	197	141	129	143	13.5	10.2	10.2	10.8
Fishing and trapping	18	23	38	72	1.2	1.7	3.0	5.4
Mining, non-ferrous smelting and quarrying	250	185	231	175	17.0	13.3	18.2	13.2
Manufacturing	200	209	166	195	13.7	15.1	13.1	14.7
Construction	312	340	281	297	21.4	24.5	22.1	22.4
Electricity, gas and water production and supply	30	42	31	33	2.0	3.0	2.4	2.5
Transportation, storage and communication	228	207	163	182	15.6	14.9	12.8	13.7
Trade	56	66	40	50	3.8	4.8	3.2	3.8
Finance	1	2	4	2	0.1	0.1	0.3	0.2
Service	64	80	89	76	4.4	5.8	7.0	5.7
Totals	**1,462**	**1,387**	**1,269**	**1,326**	**100.0**	**100.0**	**100.0**	**100.0**

Causes of Industrial Fatalities.—During 1959, of the 1,326 fatal accidents to industrial workers, 372 were the result of the victims being struck by objects—60 by falling trees or limbs, 47 by automobiles or trucks, 37 by objects falling or flying in mines and quarries, 33 by landslides or cave-ins, 32 by trains or other railway vehicles and 30 by materials falling from stockpiles and loads. Collisions, derailments, wrecks, etc., were responsible for 341 fatalities—automobiles and trucks were involved in 153 of these fatalities, tractors and loadmobiles in 66, watercraft in 61, and aircraft in 38. Falls and slips were responsible for 218 industrial deaths, of which 210 were falls to different levels, including 65 deaths caused by falls into rivers, lakes, seas or harbours, 38 by falls from scaffolds or stagings and 34 by falls from buildings, roofs or towers. The classification "caught in, on, or between objects, vehicles, etc." caused 109 fatalities, 26 of which were caused by machinery, 22 by tractors and loadmobiles and 21 by hoisting or conveying apparatus. Conflagrations, explosives and exposure to hot substances caused 89 fatalities and 83 were caused by exposure to dust, poisonous gases and poisonous substances. Contact with electric current was responsible for 64 deaths and 17 were the result of over-exertion, strain, etc.

Subsection 2.—Workmen's Compensation*

In all provinces legislation is in force providing for compensation for injury to a workman by accident arising out of and in the course of employment, or for disablement caused by a specified industrial disease, except where the workman is disabled for fewer than a stated number of days. The Acts of all provinces provide for a compulsory system of collective liability on the part of employers. To ensure payment of compensation, each Act provides for an accident fund, administered by the province, to which employers are required to contribute at a rate determined by the Workmen's Compensation Board in accordance with the hazards of the industry. A workman to whom these provisions apply has no right of action against his employer for injury from an accident during employment. In Ontario and Quebec, public authorities, railway and shipping companies, and telephone and telegraph companies are individually liable for compensation as determined by the Board and pay a proportion of the expenses of administration. A federal Act provides for compensation for accidents to Federal Government employees according to the conditions laid down by the Act of the province in which the employee is usually employed. Seamen who are not under a provincial Workmen's Compensation Act are entitled to compensation under the Merchant Seamen Compensation Act.

In all provinces, free medical aid is given to workmen during disability. Compensation is payable in all provinces for anthrax and for poisoning from arsenic, lead, mercury and phosphorus, and silicosis is compensated under certain conditions. Other diseases compensated vary according to the industries of the provinces.

Scope of the Workmen's Compensation Acts.—The Acts vary in scope but in general they cover construction, mining, manufacturing, lumbering, transportation and communication and the operation of public utilities. Undertakings in which not more than a stated number of workmen are usually employed may be excluded, except in Alberta and British Columbia.

Benefits.—Each Act provides for a waiting period, i.e., a minimum period of time during which a workman must be disabled from earning full wages in order to qualify for compensation. In Manitoba, Saskatchewan and Alberta the waiting period is one day. Compensation is not payable when a workman is off work only for the day on which the accident occurs but if he is disabled for a longer time compensation begins from the day following the accident. The waiting period in British Columbia is three days, in Newfoundland, Prince Edward Island, Nova Scotia and New Brunswick four days, and in Quebec and Ontario five days. Where a disability continues beyond the waiting period, compensation is payable from the date of the accident. The waiting period does not restrict the right of the workman to medical aid which, under all the Acts, is given from the date of the accident.

Burial expenses are paid to the amount of $400 in Quebec, $300 in Prince Edward Island, New Brunswick and Ontario, $250 in Nova Scotia, Saskatchewan and British Columbia, and $200 in Newfoundland, Manitoba and Alberta. In all provinces an additional sum is allowed for transporting the workman's body.

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* More detailed information is given in the Department of Labour publication *Workmen's Compensation in Canada, A Comparison of Provincial Laws.*

A widow or invalid widower or a foster mother with children under the age limit receives a monthly payment of $100 in Saskatchewan, $90 in British Columbia, $75 in Quebec, Ontario and Manitoba, $60 in Newfoundland, Nova Scotia, New Brunswick and Alberta, and $50 in Prince Edward Island. In addition, a lump sum of $300 is paid in Quebec, Ontario, Manitoba and Saskatchewan, $250 in British Columbia, $200 in Prince Edward Island, $150 in Nova Scotia and Alberta, and $100 in Newfoundland and New Brunswick.

For each child in the care of a parent or foster mother receiving compensation a monthly payment of $35 is made in Manitoba, Saskatchewan and British Columbia, $30 in Alberta, $25 in Quebec and Ontario, $22.50 in Nova Scotia, and $20 in Newfoundland, Prince Edward Island and New Brunswick.

For each orphan child a monthly payment of $50 is made in Saskatchewan, $45 in Manitoba, $40 in New Brunswick and British Columbia, $35 in Quebec and Ontario, and $30 in Newfoundland, Prince Edward Island, Nova Scotia and Alberta. In Alberta, a further amount, not exceeding $10 a month, may be given at the discretion of the Board, and the maximum allowance payable to a family of orphans is $120 in Prince Edward Island. In Saskatchewan, the Board may in its discretion make a lump sum payment, not exceeding $50, to an orphan child.

Invalids excepted, payments to children are not continued beyond the age of 16 years in seven of the provinces but the Board has discretion to pay compensation to the age of 18 (19 in Saskatchewan) if it is considered desirable for a child to continue his education. In Quebec, the age limit is 18 years, and in New Brunswick and British Columbia compensation is paid to the age of 18 if a child is attending school regularly.

In Newfoundland, Prince Edward Island and Alberta, payments are made to invalid children only for the length of time the Board considers that the workman would have contributed to their support. In the other provinces payments are continued until recovery.

All the Acts provide that where the only dependants are persons other than consort or children compensation is to be a reasonable sum proportionate to the pecuniary loss but the total monthly amount to be paid to all such dependants is limited to $100 in Ontario, $90 in British Columbia, $85 in Alberta, and $60 in Prince Edward Island and Nova Scotia. In British Columbia, if a workman leaves dependent parents as well as a widow or orphans, the maximum payable to a parent or parents is $90 a month. Manitoba provides for a maximum monthly pension of $75 to a wholly dependent mother and for a maximum of $60 for other dependants. Compensation to dependants, other than consort or children, is continued only for such time as the Board considers that the workman would have contributed to their support.

Except in Nova Scotia, Alberta and British Columbia, each Act places a maximum on the total amount of benefits payable to dependants if the workman dies. A maximum is placed on the amounts that may be paid to the widow and children and to orphan children in Prince Edward Island—$170 to the former and $120 to the latter. The maximum to all dependants is 75 p.c. of the workman's earnings in Newfoundland, New Brunswick, Quebec and Manitoba, and in Ontario and Saskatchewan the average earnings of the workman are the maximum amount payable.

Irrespective of the workman's earnings, however, compensation may not fall below certain minimum monthly amounts. The minimum payable to a consort and one child in Quebec is $100 a month, to a consort and two children $125, and to a consort and more than two children $150; in Manitoba, the minimum is $110 if there is a consort and one child and $145 if there is more than one child; in Saskatchewan, the minimum is $135 a month to a consort and one child and $170 to a consort and two children plus $20 a month for each additional child. In Newfoundland, a widow must receive at least $60 a month with a further payment of $20 a month for each child under 16 unless the total exceeds $130. In Ontario, the minimum payable to a widow is $75 a month with a further payment of $25 for each child up to but not exceeding $150 a month.

Compensation for total disablement in all provinces is a periodical payment for the duration of the disability equal to 75 p.c. of average earnings. Except in New Brunswick, the Acts fix minimum sums to be paid for a permanent total disability. The minimum is $15 a week in Quebec, $20 in Prince Edward Island, $25 in Manitoba, Alberta and British Columbia, and $30 a week in Saskatchewan. In Newfoundland, the minimum is $65 a month and in Nova Scotia and Ontario $100 a month. If average earnings are less than the minimum amount allowed, the amount of the earnings is paid in all provinces except Nova Scotia and Saskatchewan. For partial disablement, compensation is either 75 p.c. of the difference in earnings before and after the accident or an amount determined by the Board on the basis of impairment of earning capacity estimated from the nature of the injury. In the latter case the workman is entitled to the same fraction of 75 p.c. of earnings as his impairment is of his full earning capacity. In all provinces, if the impairment of earning capacity is 10 p.c. or less (5 p.c. or less in Alberta), a lump sum may be given.

The average earnings on which compensation is based are limited to $6,000 a year in Saskatchewan, $5,000 in Quebec, Ontario and British Columbia, $4,500 in Manitoba, $4,000 in New Brunswick and Alberta, $3,600 in Nova Scotia, and $3,000 in Newfoundland and Prince Edward Island. If the workman's earnings at the time of accident are not considered a proper basis for compensation, the Board may use as a basis the average earnings of another person in the same grade of work. Compensation paid to a workman under 21 years of age may be raised later if it appears that his earning power would have increased had the injury not occurred.

Table **32** gives the number of industrial accidents reported by each of the provinces and the amount of compensation paid by the Workmen's Compensation Board in the years 1958 and 1959.

32.—Industrial Accidents Reported and Compensation Paid by Workmen's Compensation Boards, 1958 and 1959

Year and Province	Industrial Accidents Reported					Compensation Paid[2]
	Medical Aid Only[1]	Temporary Disability	Permanent Disability	Fatal	Total	
	No.	No.	No.	No.	No.	$
1958						
Newfoundland	4,663	3,410	91	15	8,179	1,249,467
Prince Edward Island	843	616	6	3	1,468	260,792
Nova Scotia	8,961	6,075	651	110	15,797	3,755,395[3]
New Brunswick	7,402	5,773	175	35	13,385	1,946,181[4]
Quebec	..	..	..	206	95,868	20,653,387[5]
Ontario	161,355	64,441	2,440	303	228,539	44,691,254[5]
Manitoba	12,983	5,314	259	32	18,588	2,985,000
Saskatchewan	11,136	9,320	202	41	20,699	4,645,668[6]
Alberta	25,995	19,033	781	103	45,912	8,354,302
British Columbia	40,753	20,951	1,249	156	63,109	18,971,980
Totals, 1958	...	...	...	**1,004**	**511,544**	**107,513,426**
1959						
Newfoundland	5,142	4,134	92	17	9,385	1,249,534
Prince Edward Island	1,038	800	20	3	1,861	243,096
Nova Scotia	10,373	6,451	591	47	17,462	4,152,359[3]
New Brunswick	7,076	6,336	148	27	13,587	1,766,063[4]
Quebec	..	..	..	186	99,258	21,224,923[5]
Ontario	179,358	70,225	2,612	309	252,504	48,415,769[5]
Manitoba	12,983	5,314	259	32	18,588	3,416,713
Saskatchewan	11,932	9,670	151	47	21,800	2,390,408[6]
Alberta	27,602	19,743	815	117	48,277	10,471,916
British Columbia	41,324	21,717	1,134	161	64,336	19,888,821
Totals, 1959	...	...	...	**946**	**547,058**	**113,219,602**

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[1] Accidents requiring medical treatment but not causing disability for a sufficient period to qualify for compensation; the period varies in the different provinces. [2] Includes, except where otherwise noted, payments to compensate loss of earnings, medical aid payments, cost of rehabilitation and hospitalization (not including capital expenditures) and pensions paid (not pensions awarded) for temporary and permanent disabilities. [3] Excludes payments for hospitalization and rehabilitation. [4] Excludes payments for hospitalization. [5] Excludes payments by employers who make direct compensation to their employees; such employees come under Schedule II of the Ontario and Quebec Workmen's Compensation Acts. [6] Excludes payments for hospitalization and rehabilitation and funeral and related expenses.

Section 8.—Organized Labour in Canada*

Close to 1,460,000 Canadian workers belonged to labour unions in 1960. Affiliates of two central bodies—the Canadian Labour Congress, over a million strong since its formation in 1956, and the Canadian and Catholic Confederation of Labour—continued to account between them for well over 80 p.c. of organized labour, while much of the remainder of union membership was represented by organizations active on a regional, national or international level, but independent of a central labour congress.

At the beginning of 1960, unions belonging to the Canadian Labour Congress had a total membership of 1,123,000, while the Canadian and Catholic Confederation of Labour had approximately 102,000 members. Later in the year, the name of the Canadian and Catholic Confederation of Labour was changed to the Confederation of National Trade Unions.

More than two-thirds of the organized labour force in Canada belong to unions that operate on the international level. In January 1960, 90 of the 108 international unions active in Canada were affiliates of the CLC, and 85 of those were also within the American Federation of Labor and Congress of Industrial Organizations. Eleven of the remaining 18 international unions had no congress link in Canada, but were affiliated with the AFL-CIO. There were 48 national and regional unions in Canada at the beginning of 1960, 17 of them affiliated with the CLC and 13 with the CCCL.

International, national and regional unions had more than 1,372,000 members within their ranks in 156 organizations ranging in size from 10 to 82,000 members. The United Steelworkers of America, with 82,000 members in Canada, continued to rank first, followed by the United Brotherhood of Carpenters and Joiners of America with 66,000 members and the International Union, United Automobile, Aircraft, and Agricultural Implement Workers of America with 61,000 members. The National Union of Public Employees, which in the previous year had moved ahead of the Canadian Brotherhood of Railway, Transport and General Workers as the largest national union in Canada, reported a further membership gain, bringing its total to nearly 45,000.

The grand total of 1,459,000 members reported by labour organizations in the 1960 survey was equal to approximately 3 p.c. of the estimated total number of non-agricultural paid workers in Canada.

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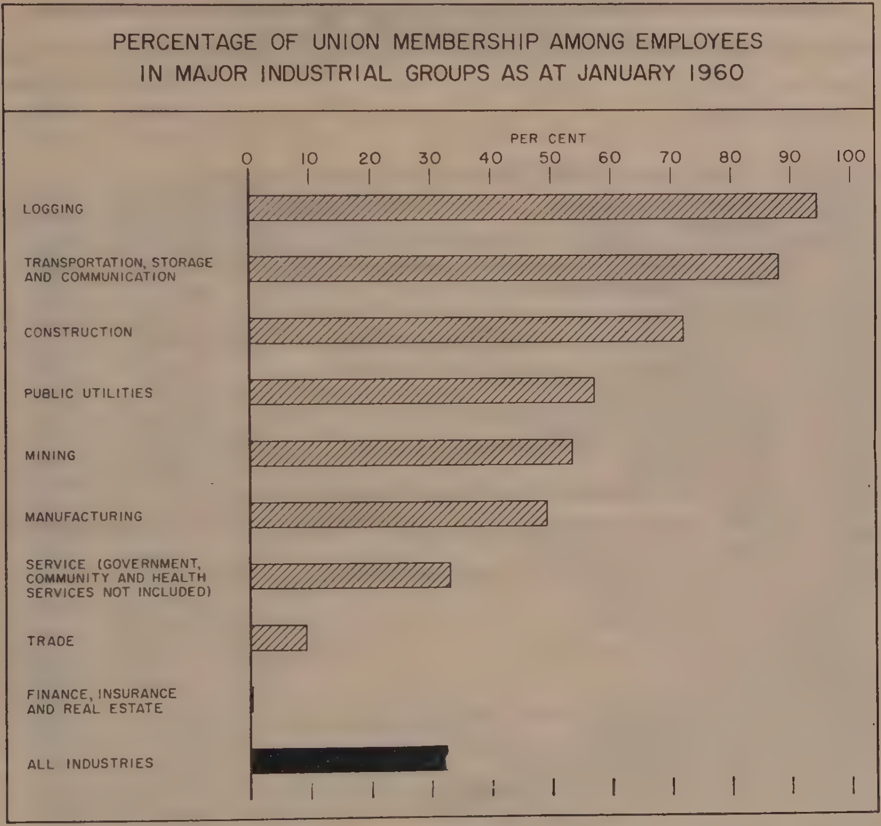
* A special article on the History of the Labour Movement in Canada prepared by Dr. Eugene Forsey, Director of Research, Canadian Labour Congress, appears in the 1957-58 Year Book, pp. 795-806.

33.—Union Membership in Canada, 1930-60

Year	Members	Year	Members	Year	Members
	'000		'000		'000
1930	322	1940	362	1951[1]	1,029
1931	311	1941	462	1952	1,146
1932	283	1942	578	1953	1,220
1933	286	1943	665	1954	1,268
1934	281	1944	724	1955	1,268
1935	281	1945	711	1956	1,352
1936	323	1946	832	1957	1,386
1937	383	1947	912	1958	1,454
1938	382	1948	978	1959	1,459[3]
1939	359	1949[1,2]	1,006	1960	1,459

[1] Figures for years up to and including 1949 are as at Dec. 31; figures from 1951 are as at Jan. 1. [2] Newfoundland included from 1949. [3] Adjustment in coverage resulting in net addition of approximately 23,000 members for the first time.


PERCENTAGE OF UNION MEMBERSHIP AMONG EMPLOYEES IN MAJOR INDUSTRIAL GROUPS AS AT JANUARY 1960

34.—Union Membership, by Type of Union and Affiliation, as at January 1960

Type and Affiliation	Unions	Locals	Membership
	No.	No.	No.
International Unions	108	4,342	1,051,997
AFL–CIO/CLC	85	3,934	888,748
CLC only	5	92	53,841
AFL–CIO only	11	53	33,117
Unaffiliated railway brotherhoods	2	126	9,857
Other unaffiliated unions	5	137	66,434
National and Regional Unions	48	2,037	320,118
CLC	17	1,346	154,647
CCCL	13	413	93,673
Unaffiliated unions	18	278	71,798
Totals, International, National and Regional Unions	156	6,379	1,372,115
Directly Chartered Local Unions	298	298	33,864
CLC	234	234	25,595
CCCL	64	64	8,269
Independent Local Organizations	128	128	53,180
Grand Totals	582	6,805	1,459,159

35.—International, National and Regional Unions Reporting 1,000 or more Members in Canada as at January 1960

Union	Locals in Canada	Membership in Canada
	No.	No.
Amalgamated Association of **Street, Electric Railway** and **Motor Coach** Employees of America	33	12,143
Amalgamated **Clothing** Workers of America	40	15,000
Amalgamated **Lithographers** of America	10	2,911
Amalgamated **Meat Cutters** and **Butcher** Workmen of North America	28	8,500
American Federation of **Grain Millers**	8	1,529
American Federation of **Musicians** of the United States and Canada	32	13,941
American Federation of **Technical Engineers**	3	1,024
American **Newspaper** Guild	5	2,976
Association of **Radio** and **Television** Employees of Canada	11	1,890
Bakery and **Confectionery** Workers' International Union of America	24	8,454
Boot and **Shoe** Workers' Union	9	1,056
Bricklayers, Masons and **Plasterers'** International Union of America	55	7,420
British Columbia **Government** Employees' Association	51	10,906
Brotherhood of **Locomotive Engineers**	110	9,236
Brotherhood of **Locomotive Firemen** and **Enginemen**	105	9,042
Brotherhood of **Maintenance of Way** Employees	203	20,000
Brotherhood of **Painters, Decorators** and **Paperhangers** of America	61	7,693
Brotherhood of **Railroad Signalmen**	21	1,159
Brotherhood of **Railroad Trainmen**	116	22,513
Brotherhood of **Railway** and **Steamship Clerks, Freight Handlers, Express** and **Station** Employees	160	20,556
Brotherhood of **Railway Carmen** of America	103	22,175
Building Service Employees' International Union	23	11,182
Canadian **Air Line Flight Attendants** Association	12	1,000
Canadian Brotherhood of **Railway, Transport** and **General** Workers	253	33,150
Canadian Council of **Authors** and **Artists**	5	1,600
Canadian **Merchant Service** Guild, Inc.	2	2,420
Canadian **Postal** Employees Association	426	9,831
Canadian **Seafood** Workers' Union	11	1,650
Canadian **Telephone** Employees' Association	48	16,974
Canadian **Textile** Council	9	2,100
Commercial Telegraphers' Union	5	5,285
Communications Workers of America	8	3,035
Distillery, Rectifying, Wine and **Allied** Workers' International Union of America	14	3,500
Federated Association of **Letter Carriers**	147	5,985
Fédération des Métiers de **l'Imprimerie** du Canada Enrg.	25	4,608
Fédération des Travailleurs du **Bâtiment** du Canada	81	22,611
Fédération des Travailleurs du **Bois Ouvré** du Canada, Inc.	22	4,066
Fédération Nationale Catholique des Employés du **Commerce,** Inc.	20	3,262
Fédération Nationale Catholique des **Services,** Inc.	36	8,500
Fédération Nationale Catholique du **Textile,** Inc.	26	8,114
Fédération Nationale de la **Métallurgie**	34	14,200
Fédération Nationale des Employés de l'Industrie **Minière,** Inc.	12	4,801
Fédération Nationale des Employés des **Corporations Municipales** et **Scolaires** du Canada, Inc.	64	6,353
Fédération Nationale du **Cuir** et de la **Chaussure** du Canada, Inc.	14	4,236
Fédération Nationale des Travailleurs de l'Industrie du **Vêtement,** Inc.	28	4,850
Fédération Nationale des Travailleurs de la **Pulpe** et du **Papier,** Inc.	37	7,500
Federation of **Telephone** Workers of British Columbia	20	5,100
Hotel and **Restaurant** Employees and **Bartenders** International Union	33	13,345
International Alliance of **Theatrical Stage Employees** and **Moving Picture Machine Operators** of the United States and Canada	47	1,550
International Association of **Bridge, Structural** and **Ornamental Iron** Workers	22	9,298
International Association of **Fire Fighters**	134	10,000
International Association of **Heat** and **Frost Insulators** and **Asbestos** Workers	10	1,292
International Association of **Machinists**	171	39,943
International Brotherhood of **Boilermakers, Iron Shipbuilders, Blacksmiths, Forgers** and **Helpers**	38	6,200
International Brotherhood of **Bookbinders**	20	3,305
International Brotherhood of **Electrical** Workers	170	36,733
International Brotherhood of **Firemen** and **Oilers**	56	2,100
International Brotherhood of **Pulp, Sulphite** and **Paper Mill** Workers	108	35,235
International Brotherhood of **Teamsters, Chauffeurs, Warehousemen** and **Helpers** of America	41	39,676
International **Chemical** Workers' Union	95	14,500
International **Hod Carriers, Building** and **Common Laborers'** Union of America	38	22,052
International **Ladies' Garment** Workers Union	26	15,481
International **Longshoremen's** Association	31	7,500
International **Longshoremen's** and **Warehousemen's** Union	12	2,000
International **Molders'** and **Foundry** Workers' Union of North America	40	7,376
International **Photo-engravers'** Union of North America	8	1,090
International **Printing Pressmen** and **Assistants'** Union of North America	62	8,021

35.—International, National and Regional Unions Reporting 1,000 or more Members in Canada as at January 1960—concluded

Union	Locals in Canada	Membership in Canada
	No.	No.
International **Typographical** Union	60	7,247
International Union of **Electrical, Radio** and **Machine** Workers	45	16,500
International Union of **Elevator** Constructors	10	1,209
International Union of **Mine, Mill** and **Smelter** Workers	46	33,000
International Union of **Operating Engineers**	35	14,262
International Union, United **Automobile, Aircraft** and **Agricultural Implement** Workers of America	55	60,968
International Union of United **Brewery, Flour, Cereal, Soft Drink** and **Distillery** Workers of America	51	5,200
International **Woodworkers** of America	52	36,688
Journeymen **Barbers, Hairdressers, Cosmetologists** and **Proprietors** International Union of America	23	1,982
Marine Workers' Federation	10	2,600
Montreal **Steel** and **Foundry** Workers' Union	5	1,363
National Association of **Broadcast** Employees and **Technicians**	19	1,770
National Association of **Marine Engineers** of Canada, Inc.	12	1,500
National Council of Canadian Labour	55	10,400
National Union of **Public** Employees	276	44,873
National Union of **Public Service** Employees	95	28,000
Northern Electric Employee Association	3	7,288
Office Employees' International Union	42	5,209
Oil, Chemical and **Atomic** Workers' International Union	45	11,211
Operative **Plasterers' and Cement Masons'** International Association of the United States and Canada	28	3,934
Order of **Railroad Telegraphers**	10	10,569
Retail Clerks' International Association	14	7,772
Retail, Wholesale and **Department Store** Union	50	16,000
Saskatchewan **Civil Service** Association	17	6,330
Seafarers' International Union of North America	3	16,400
Sheet Metal Workers' International Association	44	7,869
Shipyard General Workers' Federation of British Columbia	4	3,125
Textile Workers' Union of America	74	18,000
Tobacco Workers' International Union	11	6,137
Traffic Employees' Association	31	10,000
Trans-Canada **Air Lines Sales** Employees' Association	25	1,050
United Association of Journeymen and Apprentices of the **Plumbing** and **Pipe Fitting** Industry of the United States and Canada	74	20,186
United Brotherhood of **Carpenters** and **Joiners** of America	235	66,134
United **Cement, Lime** and **Gypsum** Workers' International Union	33	3,876
United **Electrical, Radio** and **Machine** Workers of America	28	18,500
United **Fishermen** and **Allied** Workers' Union	29	7,142
United **Garment** Workers of America	12	2,000
United **Glass** and **Ceramic** Workers of North America	19	4,225
United **Hatters, Cap** and **Millinery** Workers International Union	11	3,500
United **Mine** Workers of America	61	14,807
United **Packinghouse** Workers of America	147	24,650
United **Paper Makers** and **Paper Workers**	59	9,253
United **Rubber, Cork, Linoleum** and **Plastic** Workers of America	40	10,478
United **Steelworkers** of America	401	82,000
United **Textile** Workers of America	31	9,200
Union Catholique des **Cultivateurs** (Service Forestier)	5	5,460
Union des **Manutenteurs** de **Poisson** de Nouveau-Brunswick	7	1,050
Upholsterers' International Union of North America	14	4,044

Section 9.—Strikes and Lockouts

Statistical information on strikes and lockouts in Canada is compiled by the Economics and Research Branch of the Department of Labour on the basis of reports from the Unemployment Insurance Commission. Tables **36** and **37** cover strikes and lockouts involving six or more workers and lasting at least one working day, and strikes and lockouts lasting less than one day or involving fewer than six workers but exceeding a total of nine man-days. The developments leading to work stoppages are often too complex to make it practicable to distinguish statistically between strikes on the one hand and lockouts on the other. However, a work stoppage that is clearly a lockout is not often encountered.

The number of workers involved includes all workers reported on strike or locked out, whether or not they all belonged to the unions directly involved in the disputes leading to work stoppages. Where the number of workers involved varied in the course of a stoppage, the peak figure is used in tabulating annual totals. Workers indirectly affected, such as those laid off as a result of a work stoppage, are not included in the number of workers involved.

Duration of strikes and lockouts in terms of man-days is calculated by multiplying the number of workers involved in each work stoppage by the number of working days the stoppage was in progress. Where the number of workers involved varied during the period of a stoppage, an appropriate adjustment is made in the calculation as far as this is practicable. The duration in man-days of all work stoppages in a year is also shown as a percentage of estimated working time, based on the annual average of all non-agricultural paid workers in Canada.

The data on duration of work stoppages in man-days are provided to facilitate comparison of work stoppages in terms of a common denominator. They are not intended as a measure of the loss of productive time to the econony.

36.—Strikes and Lockouts in Canada, 1951-60

Year	Strikes and Lockouts Beginning during Year	Strikes and Lockouts in Existence during Year			
		Strikes and Lockouts	Workers Involved	Duration in Man-Days	
				Man-Days	Percentage of Estimated Working Time
	No.	No.	No.	No.	p.c.
1951	257	259	102,870	901,740	0.08
1952	216	222	120,818	2,879,960	0.29
1953	167	174	55,988	1,324,720	0.13
1954	156	174	62,250	1,475,200	0.15
1955	149	159	60,090	1,875,400	0.18
1956	221	229	88,680	1,246,000	0.11
1957	242	249	91,409	1,634,880	0.14
1958	253	262	112,397	2,872,340	0.24
1959	203	218	100,127	2,286,900	0.19
1960p	272	278	48,812	747,120	0.06

37.—Strikes and Lockouts, by Industry, 1959

Industry	Strikes and Lockouts Beginning during Year	Strikes and Lockouts in Existence during Year		
		Strikes and Lockouts	Workers Involved	Duration in Man-Days
	No.	No.	No.	No.
Logging	**6**	**7**	**30,290**	**1,443,390**
Fishing	**1**	**1**	**5,000**	**60,000**
Mining	**14**	**14**	**5,611**	**25,740**
Coal	11	11	4,973	8,100
Metal	3	3	638	17,640
Manufacturing	**83**	**92**	**32,742**	**566,640**
Foods and beverages	12	13	5,863	75,230
Tobacco and tobacco products	1	1	140	420
Rubber products	4	4	2,894	7,280
Leather products	2	2	62	2,720
Textile products	6	6	2,700	118,580
Clothing	2	4	249	12,500
Wood products	9	10	2,251	41,300
Paper products	2	2	139	200

37.—Strikes and Lockouts, by Industry, 1959—concluded

Industry	Strikes and Lockouts Beginning during Year	Strikes and Lockouts in Existence during Year		
		Strikes and Lockouts	Workers Involved	Duration in Man-Days
	No.	No.	No.	No.
Manufacturing—concluded				
Printing, publishing, etc.	5	5	134	3,700
Iron and steel products	12	14	2,975	78,450
Transportation equipment	12	13	8,247	52,330
Electrical apparatus and supplies	6	7	4,765	34,000
Non-metallic mineral products	7	7	412	25,090
Chemical products	1	1	1,860	113,300
Miscellaneous manufacturing industries	2	3	51	1,540
Construction	**46**	**48**	**7,279**	**84,660**
Transportation and Communications	**21**	**23**	**5,834**	**83,910**
Transportation	20	21	3,674	17,670
Storage	1	1	10	10
Communications	—	1	2,150	66,230
Public Utility Operation	**2**	**2**	**119**	**430**
Trade	**20**	**20**	**1,355**	**13,830**
Service	**10**	**11**	**11,897**	**8,300**
Government	6	6	11,795	3,690
Recreation	2	2	14	30
Personal	2	3	88	4,580
Totals	**203**	**218**	**100,127**	**2,286,900**

Section 10.—Canada and the International Labour Organization

The Department of Labour is the officially designated liaison between the Government of Canada and the International Labour Organization. The ILO was established in 1919, in association with the League of Nations under the Treaties of Peace, with the object of improving labour and social conditions throughout the world by international agreement and legislative action. Under an agreement approved by the General Conference of the International Labour Organization and by the United Nations General Assembly in 1946, the Organization became a specialized agency of the United Nations although it retained its autonomy.

The ILO is an association of 97 Member States, financed by their governments and democratically controlled by representatives of those governments and of their organized employers and workers. It is comprised of three main organs: (1) the Governing Body; (2) the International Labour Office; and (3) the International Labour Conference. Since World War II the ILO has extended its field of activities by the establishment of ten tripartite industrial committees to deal with problems of important world industries, by the holding of regional and special technical conferences, and by technical assistance to aid under-developed countries in such fields as co-operative merchandising, vocational training, productivity techniques and employment service organization.

The Governing Body consists of 40 members—20 government representatives, 10 employers' representatives and 10 workers' representatives. Of the government seats, each of the 10 Member States of chief industrial importance (of which Canada is one) holds a permanent place and the other 10 government representatives are elected triennially by the Conference. The worker and employer members are elected by their groups every three years at the Conference. The Governing Body meets three times a year and has supervision over the work of the International Labour Office and the various Conferences and Committees, in addition to framing the budget and approving the agendas of the Conferences and meetings. Canada's representative on the Governing Body is the Deputy Minister of Labour for Canada.

The International Labour Office acts as the permanent secretariat of the ILO and as a world research and information centre and publishing house on all subjects concerned with working and living conditions. In the operational field it assists Member States by furnishing experts on manpower training and technical and other types of assistance. The ILO maintains branch offices in all parts of the world; the Canada Branch is located at 202 Queen Street, Ottawa.

The International Labour Conference is a world assembly for the consideration of labour and social problems. It meets annually and is attended by four delegates from each Member State (two representing the government, one representing the employers and one representing the workers) accompanied by technical advisers. The Conference formulates international standards concerning working and living conditions in the form of Conventions and Recommendations. A Convention, after adoption, must be considered by the competent authorities in each Member State with a view to possible ratification; however, each Member State decides whether or not to ratify any Convention, and only by ratification does it assume the obligation to bring its legislation in that field up to the standard set by the Convention. A Recommendation is less formal: it contains general principles for the guidance of governments in drafting legislation or in issuing administrative orders and is not subject to ratification by the Member States.

There have been 44 Sessions of the International Labour Conference, at which 115 Conventions and 114 Recommendations have been adopted, covering a wide range of subjects such as industrial relations, freedom of association, hours of work, weekly rest, holidays with pay, minimum wages, night work of women and young persons, industrial health and safety, workmen's compensation, conditions of work for seamen, dockers and fishermen, unemployment and health insurance, protection of migrant workers, equal remuneration, discrimination, forced labour, radiation protection, and many other aspects of industrial and social problems. By Jan. 1, 1961, ratifications of Conventions by Member States numbered 2,242.

Canada has ratified 19 ILO Conventions, of which 12 concern maritime and dock labour. In Canada the provincial legislatures are the competent legislative authorities with jurisdiction over the subjects covered by most of the ILO Conventions and Recommendations. The Department of Labour, as the official link with the International Labour Organization, is responsible for forwarding to the ILO annual reports on ratified Conventions as well as periodical reports on many other industrial and social matters. Canada is represented at most of the ILO annual and special meetings, and accounts of the discussions and the decisions are regularly published in the *Labour Gazette*. The Department also keeps the provincial governments and the major employer and worker organizations informed of ILO activities.

CHAPTER XVII.—TRANSPORTATION

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

The physiographic and population characteristics of Canada present unusual difficulties from the standpoint of transportation. The country extends 4,000 miles from east to west and its main topographic barriers run in a north-south direction, so that sections of the country are cut off from one another by such water barriers as Cabot Strait and the Strait of Belle Isle separating the Island of Newfoundland from the mainland; by areas of rough, rocky forest terrain such as the region lying between New Brunswick and Quebec, and the areas north of Lakes Huron and Superior dividing the industrial region of Ontario and Quebec from the agricultural areas of the Prairie Provinces; and by the mountain barriers between the prairies and the Pacific Coast. Unevenly distributed along a narrow southern strip of Canada's vast area is its relatively small population of 17,814,000 (estimate of June 1, 1960). To such a country, with a population so dispersed and producing for export as well as for consumption in distant parts of the country itself, efficient and economical transportation facilities are necessities of existence.

The extent of government control over the agencies of transportation is covered in Part I of this Chapter; Parts II to VI deal with the various types of transport facility.

PART I.—GOVERNMENT CONTROL OVER AGENCIES OF TRANSPORTATION

The Federal Government's control and regulation of transportation reflect to a considerable extent conditions that date back to the period when the railways possessed a virtual monopoly of transportation within the country. Although federal regulation was a direct outcome of such particular matters as the prevention of unjust discrimination in rates and charges resulting from monoply conditions in the industry and the safety of transportation facilities and operating practices, yet the railways have been so involved in the public interest that their regulation has been extended to become the most comprehensive of any industry in Canada.

In the meantime, conditions in the transportation industry have been drastically altered by the increasing competition arising from the advance of highway transportation. Unlike the competition that existed between railways in early stages of their development, today's competition shows little indication of starting a trend toward consolidation and a return to semi-monopolistic conditions within the industry. Because so many shippers now provide their own transportation, it is evident that a large part of the present competition between common carriers has become a permanent feature of the transportation industry.

It is not surprising that regulations, which under monopoly conditions were not onerous to the railways or were purely nominal in their effect, are now alleged to have become increasingly restrictive and hampering under highly competitive conditions. Regulatory authorities are therefore faced with the problem of piecemeal revision of their regulations—retaining those where railway monoply or near-monoply conditions still make them necessary in the public interest, and relaxing those where competition can be relied on to protect the public in order to enable the railways to meet this competition more effectively. The emphasis has shifted from the regulation of monopoly to maintaining a balance between the several competing modes of transport. Indicative of this trend is the amendment to the Transport Act passed in 1955, which extends the freedom of the railways to make contract rates with shippers known as 'agreed charges'.

On Nov. 2, 1936, the amalgamation of the Department of Railways and Canals and the Department of Marine, together with the Civil Aviation Branch of the Department of National Defence to form the new Department of Transport brought under one control railways, canals, harbours, marine and shipping, civil aviation, radio and meteorology.

Road and highway development is mainly under provincial or municipal control or supervision. According to the judgment of the Judicial Committee of the Privy Council dated Feb. 22, 1954, jurisdiction over interprovincial and international highway transport rests with the Federal Government. Federal and provincial representatives conferred at Ottawa in April 1954 on means of implementing that decision and on June 26, 1954, the Motor Vehicle Transport Act was passed by the Federal Parliament giving to all provinces, at their option, the authority to apply to interprovincial and international highway transport the same regulations respecting certificates of public convenience and necessity and rates as they apply to undertakings operating entirely within the province. This Act has since been proclaimed in seven provinces.

The Board of Transport Commissioners for Canada.—The Board of Transport Commissioners for Canada was created and initially named the Board of Railway Commissioners for Canada by the Railway Act 1903, and was given its present name by the Transport Act 1938. It was organized on Feb. 1, 1904, and succeeded to all the powers and duties of its predecessor, the Railway Committee of the Privy Council. It was also given additional powers and duties which have been greatly enlarged since that date. When organized, the membership of the Board consisted of a Chief Commissioner, a Deputy Chief Commissioner and one Commissioner. In 1908 an Assistant Chief Commissioner and two other Commissioners were added. The Board is a statutory court of record, so constituted by the Railway Act and recognized as such by other courts, but it also has extensive regulative and administrative powers.

The great majority of applications and complaints to the Board are disposed of without hearing in open court, but public hearings are held in various places throughout Canada as the Board sees fit, particularly to suit the convenience of the parties and avoid expense to them. Evidence at public hearings is given under oath and interested parties appear personally or by counsel or representatives. The finding or determination of the Board upon any question of fact within its jurisdiction is binding and conclusive and no order or decision may be questioned or reviewed except on appeal to the Supreme Court of Canada upon a question of law or a question of jurisdiction with leave of a Judge of that Court, or by the Governor in Council.* Two Commissioners are a quorum or 'panel' for the hearing of a case and it is not unusual for two panels to be sitting at the same time on different cases.

The Board has jurisdiction under more than a score of Acts of Parliament, including jurisdiction, under the Railway Act and the Transport Act, over transportation by railway and by inland water, and over communication by telephone and telegraph.

Under the Railway Act its jurisdiction is, stated generally, in respect of construction, maintenance and operation of railways that are subject to the legislative authority of the Parliament of Canada, including matters of engineering, location of lines, crossings and crossing protection, safety of train operation, operating rules, investigation of accidents, accommodation for traffic and facilities for service, abandonment of operation, freight and passenger rates, and uniformity of railway accounting. The Board also has certain jurisdiction over telephones and telegraphs, including regulation of the telephone tolls of The Bell Telephone Company of Canada, the British Columbia Telephone Company, the Bonaventure and Gaspe Telephone Company and the Yellowknife Telephone Company, over tolls for express traffic, and tolls for the use of international bridges and tunnels.

The Board has jurisdiction to inquire into, hear and determine any application by any party interested who complains that any company or person has violated or failed to comply with the Railway Act or a Special Act or any order made thereunder, or who requests the Board to make any order or give any direction, leave, sanction or approval that, by law, it is authorized to make or give or with respect to any matter, act or thing that by the Railway Act or Special Act is prohibited, sanctioned or required to be done. It has power to make orders and regulations generally for carrying the Railway Act into effect and for exercising jurisdiction conferred on the Board by any other Act.

Regulation of railway freight and passenger rates is one of the Board's principal tasks. Except for certain statutory rates, it has power "to fix, determine and enforce just and reasonable rates, and to change and alter rates as changing conditions or cost of transportation may from time to time require"; it may disallow any tariff that it considers to be unjust or unreasonable or contrary to any provision of the Railway Act; it may prescribe other tolls in lieu of the tolls disallowed, or require the railway company to substitute a tariff satisfactory to the Board. Since the end of World War II there has been a succession of applications for authority to make general freight rate increases and general telephone rate increases.

A review of transport regulation was undertaken by the Royal Commission on Transportation, under the chairmanship of the Hon. W. F. A. Turgeon, which held extensive hearings in 1949-50 and issued its Report in 1951. (See 1952-53 Year Book, p. 741.) Certain of its recommendations, including the following, were incorporated into the Railway Act by amendments made in 1951: the equalization of freight rates; the requirement that, when transcontinental competitive freight rates are published, the corresponding rates to intermediate points shall not be more than one-third greater than the former; the payment by the Government of Canada of the cost of maintaining the so-called 'bridge' lines of the transcontinental railway systems in Ontario (between Sudbury, Capreol and Cochrane, and between Port Arthur and Armstrong) up to the amount of $7,000,000 annually, the amounts so received by the railways to be applied to reductions in freight rates between Eastern and Western Canada over the trackage referred to; and the requirement of a uniform classification of accounts to be prescribed by the Board of Transport Commissioners for the Canadian Pacific Railway and the Canadian National Railways.

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* The Board's judgments are reported in *Canadian Railway Cases* and *Canadian Railway and Transport Cases*, and its judgments, orders, rulings and regulations are published by the Queen's Printer, Ottawa, in what is known as *J.O.R. & R.*

Pursuant to the amendments, a uniform scale of milage class rates has been prescribed by the Board and equalization of commodity rates is being proceeded with. The Board has also prescribed a uniform classification and system of accounts for railways and has approved a new freight classification.

Under the Transport Act the Board entertains applications for licences for ships to transport goods or passengers for hire or reward between places in Canada on the Great Lakes and the Mackenzie and Yukon Rivers, except goods in bulk on waters other than the Mackenzie River. Before granting a licence the Board must be satisfied that public convenience and necessity require such transport. The Board also has regulative powers over tolls for such transport.

'Agreed charges' between shippers and carriers, authorized by the Transport Act, were also reviewed by the Hon. W. F. A. Turgeon in 1955 and his recommendations were implemented in amendments to that Act in 1955. Under the amendments, an agreement for an agreed charge shall be executed in tariff form and a duplicate original shall be filed with the Board within seven days after the making of the agreement, and the agreed charge takes effect twenty days after the filing, without necessity of the Board's approval of the charge. The Board continues to have power to fix a charge for a shipper who is unjustly discriminated against by an agreed charge and it also has power to vary or cancel an agreed charge referred to it by the Minister of Transport or the Governor in Council for investigation.

During the year 1960, a total of 2,795 applications were submitted to the Board under the provisions of the Railway Act, the Transport Act, the Maritimes Freight Rates Act, and other legislation under the Board's jurisdiction; 3,315 Orders and 10 General Orders were issued.

The Board, shortly after the interim freight rate increase of 17 p.c. was authorized in November 1958, required the railways to specify, before Apr. 10, 1959, the amount of supplementary relief sought. But before that date, the Government announced that no further general increases would be allowed for a period of one year pending the findings of a Royal Commission to be established to inquire into the railway rate structure and other matters affecting railway transportation. The Royal Commission was appointed May 13, 1959 with the Hon. C. P. McTague named as chairman (later succeeded by Murdoch Alexander MacPherson), and conducted hearings across Canada, receiving submissions from the railways and all interested parties. Volume I of its report was submitted in March 1961; two more volumes will follow.

On July 8, 1959, Parliament passed the Freight Rates Reduction Act. Designed as a relief measure for railway shippers, the Act provided a fund of $20,000,000 to permit a reduction in class rates and commodity rates (other than competitive rates) for a period of one year. In compliance with the Act, the Board of Transport Commissioners ordered the substitution of an increase of 10 p.c. for the said permissive increase of 17 p.c. effective Aug. 1, 1959. A further reduction to 8 p.c. was ordered by the Board as of May 1960. Under an amendment to the Freight Rates Reduction Act dated July 28, 1960, the reduced rates remained in effect until Apr. 30, 1961, and the aggregate of all payments under the Act was increased to not exceed $35,000,000. At the end of April 1961, the railways filed tariffs voluntarily extending the reduction. A Bill was later introduced to extend the Freight Rates Reduction Act to Apr. 30, 1962.

The Air Transport Board.—The Air Transport Board was established in September 1944 by amendment to the Aeronautics Act. Subsequent amendments to the Act were made in 1945, 1950 and 1952. The Board has three members including the Chairman, and the staff is comprised of a Senior Adviser; a legal Branch; an Operations Branch which includes the Traffic Division, Operations Analyst, Special Traffic Adviser, International Relations Division, and the Licensing and Inspection Division; an Economic and Accounting Branch which includes the Economics Division, Audit Division and Financial Analyst;

and a Secretary's Branch which includes the Administrative Division. In addition, a small staff is located in Montreal to service the Senior Canadian Representative on the Council of the International Civil Aviation Organization.

The Board is responsible for the economic regulation of commercial air services in Canada and is also required to advise the Minister of Transport in the exercise of his duties and powers in all matters relating to civil aviation. The regulatory function relates to Canadian air services within Canada and abroad and to foreign air services operating into and out of Canada. It involves the licensing of all such services and the subsequent regulation of the licensees in respect of their economic operation and the provision of service to the public. As provided by the Act, the Board issues Regulations, approved by the Governor in Council, dealing with the classification of air carriers and commercial air services, applications for licences to operate commercial air services, accounts, records and reports, ownership, transfers, consolidations, mergers and leases of commercial air services, traffic tolls and tariffs, and other related matters. Detailed regulatory instructions are issued by the Board in the form of General Orders, relating to all air services or groups of air services; Board Orders relating to individual air services; and Rules and Circulars for general guidance and information. Financial and operating statistics are collected under authority of the Board's Regulations.

The Board continues to devote special attention to the uniform charter tariff and to its interpretation for the guidance of operators in the establishment of their rates and fares. Regional route operations are under current review by the Board by way of public hearings throughout Canada.

In the field of international aviation, the Board continues to take an active part in the work of the International Civil Aviation Organization, and to undertake bilateral negotiations with a number of countries for the exchange of traffic rights. Trans-Canada Air Lines and Canadian Pacific Air Lines Limited are Canada's major designated international scheduled carriers.

The Canadian Maritime Commission.—The Canadian Maritime Commission Act passed in 1947 (RSC 1952, c. 38) constitutes the Canadian Maritime Commission a body corporate exercising its powers as an agent of Her Majesty. The Commission is established as a separate department of the Government reporting to Parliament through the Minister of Transport. The Commission is charged by Sect. 6 of the Act with the following responsibility:—

> "The Commission shall consider and recommend to the Minister from time to time such policies and measures as it considers necessary for the operation, maintenance, manning and development of a merchant marine and a ship-building and ship-repairing industry commensurate with Canadian maritime needs."

For the discharge of this responsibility the Commission is authorized to examine into, ascertain and keep records of all phases of ship operation. In addition, the Commission is specifically directed by paragraph (b) of Sect. 8 to:—

> "administer, in accordance with regulations of the Governor in Council, any steamship subventions voted by Parliament."

On May 12, 1961, the Minister of Transport announced in the House of Commons a national maritime policy designed to encourage the construction and operation of ships in Canada and, as well, provide assistance to Canadian fishermen. To this end a capital subsidy amounting to 35 p.c. of the cost will be paid by the Government toward the construction of self-propelled ships in Canadian shipyards, to be increased to 40 p.c. for work done between May 12, 1961 and Mar. 31, 1963. For steel fishing trawlers the assistance will be 50 p.c. of the cost in cases where the new trawler will replace an old vessel withdrawn from service. Capital grants toward the construction of small wooden fishing vessels are also to be increased.

Payment of the capital subsidy will be made under regulations of the Governor in Council. It is expected that around $6,000,000 will be expended in the first year of the operation of this new policy but this figure cannot be taken as a guide to future years since part of the subsidy will be applied toward the construction of large ships which require anywhere from a year to a year and one-half to complete.

Subsidy has been paid by the Government for the maintenance of essential steamship services since the latter part of the nineteenth century. Included in this program were subsidies for domestic services and, as well, mail and operating subventions for overseas services. At the outbreak of World War II all subventions except those for domestic services were suspended and since the end of the War subsidies for ocean-going ships have been paid on only two occasions. On one occasion the purpose was for the preservation of a water transportation link with Australia and New Zealand but this was discontinued in 1952 when the *Aorangi* was withdrawn from service for demolition; the other occasion was a special one-year subsidy for Canadian ocean-going ships generally during a period of depressed freight rates in 1950.

The National Energy Board.—The National Energy Act (SC 1959, c. 46) proclaimed Nov. 1, 1959, provided for the establishment of a five-member Board charged with the duty of assuring the best use of energy resources in Canada. In the performance of this function, the Board is responsible for the regulation of the construction and operation of the oil and gas pipelines that are under the jurisdiction of the Parliament of Canada, the tolls charged for transmission by oil and gas pipeline, the export and import of gas and the export of electric power, and the construction of the lines over which such power is transmitted. Up to the end of 1960, the work of the Board was confined mainly to the conducting of hearings in connection with the issuing of permits to export oil and gas and for that reason is covered in more detail in the Foreign Trade Chapter of this volume (see Index). However, toward the end of the year the Board devoted a considerable amount of time to studies associated with the development of the national oil policy.

PART II.—RAIL AND URBAN TRANSPORT*

Section 1.—Railways

Since Confederation the railways of Canada have been the principal utility for the movement of passengers and freight throughout, and beyond, the nation. The two great national systems, supplemented by a newly completed north-south line on the West Coast and a few regional independent railways, are the only carriers able to transport large volumes of freight at low cost in all weather by continuous passage over Canadian transcontinental routes. Though highway and air competition is increasing, the railways still retain their primary position in the freight transport field. However, growing public preference for air travel on long trips and for the use of private automobiles over short distances has greatly affected railway passenger services. In an attempt to meet this competition, much streamlining at both the administrative and operational levels has been undertaken by the railways, designed primarily to improve efficiency and flexibility of service.

The two national railway companies control a wide variety of Canadian and international transport and communication services. The government-owned Canadian National Railway System is the country's largest public utility and operates the greatest length of trackage in Canada. In addition, it operates a highway service fleet of coastal and ocean-going steamships, a national telegraph system connecting the principal points of Canada with other parts of the world, an extensive express service in Canada and abroad, a chain of large hotels and resorts, and a scheduled air service connecting all major cities across the country and Canadian with other North American and European points. Its chief competitor, the Canadian Pacific Railway Company, is a joint-stock corporation operating a transcontinental railway supported by a national telegraph system with connections throughout the world, a large fleet of inland, coastal and ocean-going vessels, a chain of year-round and resort hotels, a domestic north-south airline which is one of the world's great air-freight carriers, a transpacific airline service to the Orient and the Antipodes, air services to Mexico, Peru, Chile and Argentina, a transpolar air route connecting Vancouver and Amsterdam, a transatlantic service to Portugal, Spain and Italy, and a limited (one flight daily each way) transcontinental air service between Vancouver and Montreal. Also included in the company's operations are a world-wide express service and a domestic truck and bus network.

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* Revised in the Public Finance and Transportation Division, Dominion Bureau of Statistics; more detailed information is given in the annual reports of the Division. Certain of the financial statistics were compiled in co-operation with the Department of Transport.

The Pacific Great Eastern Railway, owned by the British Columbia Government, operates over a 788.6-mile route from North Vancouver to Fort St. John in the Peace River area of northeastern British Columbia, with a branch line from Chetwynd to Dawson Creek. The completion in 1958 of the northern extension of this line opened up to development the vast interior of the province and brought to an end the biggest railway construction job undertaken in North America for two decades. With the completion in May 1959 of the last link in the microwave system, the PGE became the first railway on the Continent to be operated entirely by means of radio communication.

The statistics of Subsections 1 to 3 of this Section cover the combined railway facilities of all companies operating in Canada, including intercity freight and passenger services of electric railway companies. Details relating to the Canadian National Railway System are dealt with separately in Subsection 4. A special article covering the consolidation and organization of the CNR appears in the 1955 Year Book at pp. 840-847.

Subsection 1.—Milage and Equipment

Construction was begun in 1835 on the first railway in Canada—the short link of 14.5 miles between Laprairie and St. Johns, Que.—but only 66 miles were in operation by 1850. The first great period of construction was in the 1850's when the Grand Trunk and the Great Western Railways were built as well as numerous smaller lines. The building of the Intercolonial and the Canadian Pacific railways contributed to another period of rapid expansion in the 1870's and 1880's. In the last period of extensive railway building (1900-17), the Grand Trunk Pacific, National Transcontinental and Canadian Northern Railways were constructed.

Only a gradual increase has taken place in the milage of signal track line since the 1920's. Recently, however, the development of a number of large industrial projects in districts far removed from transport facilities has necessitated the building of branch lines. Those completed up to 1956 are listed in the 1957-58 Year Book, p. 815, and those completed in 1957 and 1958 in the 1959 Year Book, p. 775. During 1959 the eastern section of the Chibougamau branch line constructed by the CNR from St. Félicien to Cache Lake in Quebec, a distance of 133 miles, was officially placed in service; the western section of this line, from Beattyville to Chibougamau, was completed in 1957, opening up mineral-rich areas and linking them with the industrial centres of the province. Another branch of this line, to serve Mattagami Lake mines in northwestern Quebec, will be constructed during 1961-62; it will be 60 miles in length and cost an estimated $9,660,000. The 52-mile line from Optic Lake to Chisel Lake in Manitoba, built at a cost of $8,800,000 to connect a base metal mining development with the smelter at Flin Flon, was completed in September 1960.

While new construction has added considerably to single track milage placed in operation in the past few years, other lines have been abandoned because they have become unprofitable. Thus, new milage is not clearly reflected in the totals shown in Table 1.

1.—Railway Track Milage Operated, 1900-59

NOTE.—Figures of total milage of single track operated for 1835-1909 are given in the 1941 Year Book, p. 546; for 1911-14 in the 1954 edition, p. 786; for 1916-24 in the 1955 edition, p. 830; and for 1926-49 in the 1956 edition, p. 792.

Single Track Milage		Track Milage by Province and Type				
Year	Miles in Operation	Province and Type of Track	1956	1957	1958	1959
	No.		No.	No.	No.	No.
		Single—				
1900	17,657	Newfoundland	934	934	934	934
1905	20,487	Prince Edward Island	285	285	285	285
1910	24,731	Nova Scotia	1,391	1,370	1,336	1,333
1915	34,882	New Brunswick	1,799	1,818	1,818	1,818
1920	38,805	Quebec	4,940	5,096	5,096	5,228
1925	40,350	Ontario	10,516	10,513	10,467	10,421
1930	42,047	Manitoba	4,974	5,005	5,004	5,004
1935	42,916	Saskatchewan	8,721	8,721	8,721	8,721
1940	42,565	Alberta	5,680	5,680	5,679	5,680
1945	42,352	British Columbia	4,015	4,071	4,388	4,388
1950[1]	42,979	Yukon	58	58	58	58
1951	42,956	In United States	339	339	339	339
1952	42,953					
1953	43,163	**Totals, Single**	**43,652**	**43,890**	**44,125**	**44,209**
1954	43,132					
1955	43,444	Second	2,476	2,471	2,444	2,350
1956	43,652	Industrial	2,384	1,208	1,216	1,219
1957	43,890	Yard and sidings	11,318	11,528	11,534	11,616
1958	44,125					
1959	44,209	**Grand Totals**	**59,830**[2]	**59,097**[2]	**59,319**[3]	**59,394**[4]

[1] Newfoundland included from 1950. [2] Includes 28 miles of joint track. [3] Excludes 51 miles of joint track. [4] Excludes 52 miles of joint track.

Rolling-Stock.—Although the figures of Table 2 show the number of the different types of rolling-stock in operation at Dec. 31 of the years 1951 to 1959, they do not by any means give a complete picture of rolling-stock capacity for service. Each year hundreds of units, particularly freight cars, are retired and replaced by more efficient equipment, much of it specially designed and engineered for specific hauling jobs. Improvement in the efficiency of car use is also a factor that may reduce the amount of equipment required. Between 1951 and 1959 the average capacity of box cars increased from 44.3 tons to 46.8 tons, of gondola cars from 62.0 tons to 65.7 tons, flat cars from 43.3 tons to 47.0 tons, hopper cars from 59.4 tons to 66.7 tons, ore cars from 60.0 tons to 79.6 tons and of all freight cars from 46.0 tons to 51.1 tons. The average tractive power of locomotives advanced during the same period from 42,741 lb. to 53,368 lb. Table 2 shows the increasing number of diesel locomotives in service up to the end of 1959; rapid replacement of steam units continued during 1960 and by the end of the year all rail transportation could be handled by diesel power, although some steam equipment was still in operation.

2.—Railway Rolling-Stock in Operation as at Dec. 31, 1951-59

Type	1951	1953	1955	1956	1957	1958	1959
	No.	No.	No.	No.	No.	No.	No.
Locomotives	**4,715**	**4,818**	**4,714**[1]	**4,790**	**4,821**	**4,823**	**4,720**
Steam—							
Coal burning	3,553	3,162	2,521	2,228	1,857	1,483	1,143
Oil burning	555	667	704	621	537	477	371
Diesel electric	574	956	1,455	1,895[1]	2,372	2,799	3,155
Electric	33	33	33	46	55	64	51
Passenger Cars	**6,366**	**6,456**	**6,574**	**6,220**[2]	**5,942**	**5,733**	**5,456**
Coach	2,169	2,064	2,058	1,799	1,597	1,486	1,409
Combination	339	331	325	340	343	328	182
Colonist	315	291	226	178	136	124	96
Dining	196	180	201	186	183	174	159
Parlour	153	161	172	173	167	162	143
Sleeping	803	801	969	925	879	900	919
Baggage, express and postal	2,201	2,430	2,433	2,404	2,398	2,336	2,353
Self-propelled	49	59	75	90	129	139	128
Other	141	139	115	112	110	84	67

For footnotes, see end of table.

2.—Railway Rolling-Stock in Operation as at Dec. 31, 1951-59—concluded

Type	1951	1953	1955	1956	1957	1958	1959
	No.	No.	No.	No.	No.	No.	No.
Freight Cars	**180,725**	**187,980**	**185,956**	**191,974**[3]	**197,907**	**196,893**	**194,512**
Automobile	6,396	7,560	7,406	6,370	6,733	6,722	7,270
Ballast	1,803	1,940	2,378	2,156	2,646	2,708	3,140
Box	121,318	119,753	114,814	118,353	121,346	117,604	114,181
Flat	11,062	11,690	12,037	11,876	11,975	12,058	12,270
Gondola	14,098	17,603	18,592	19,052	19,904	20,522	20,428
Hopper	8,897	11,598	12,247	12,870	13,788	15,493	15,601
Ore	1,902	1,969	2,559	5,465	5,967	6,004	5,964
Refrigerator	8,231	9,438	9,735	9,906	10,022	10,184	10,155
Stock	6,509	6,057	5,776	5,501	5,141	5,195	5,025
Tank	460	328	378	389	384	382	455
Other	49	44	34	16	1	21	23
Privately Owned Cars	—	—	—	—	—	—	**4,853**
Flat	—	—	—	—	—	—	7
Hopper	—	—	—	—	—	—	37
Tank	—	—	—	—	—	—	4,809

[1] Includes one gasoline locomotive. [2] Includes 13 cars not specified as to type. [3] Includes 20 cars not specified as to type.

Subsection 2.—Finances

The tables in this Subsection give information on capital liability and capital investment, earnings, operating expenses, employees and their earnings and government aid to all railways.* Financial statistics of government-owned railways are given separately and in detail in Subsection 4. A Uniform Classification of Accounts for common carriers became effective for the Canadian National and the Canadian Pacific railways on Jan. 1, 1956, and for all other railways on Jan. 1, 1957. In transportation statistics a distinction is made between expenditures and expenses. In this Subsection, the term 'expenses' is used as defined in the Uniform Classification of Accounts and refers to the expenses of furnishing rail transportation service and of operations incident thereto, including maintenance and depreciation of the plant used in such service.

Capital Liability and Investment.—The capital liability of railways operating in Canada for the years 1940 to 1959 is shown in Table 3. The increase of $191,962,959 in 1959 over 1958 compares with an increase in investment in road and equipment property of $255,224,143 as shown in Table 4.

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* Statistics for individual railways are given in DBS annual report *Railway Transport*, published in six parts (Catalogue Nos. 52-207—52-212).

3.—Capital Liability of Railways, 1940-59

NOTE.—Figures for 1876 to 1925 are given in the 1927-28 Year Book, p. 649, and those for 1926-39 in the 1947 edition, p. 662.

(Exclusive of Canadian railway capital owned by Canadian railways)

Year	Stocks	Funded Debt	Total	Year	Stocks	Funded Debt	Total
	$	$	$		$	$	$
1940	1,762,473,489	1,617,561,683	3,380,035.172	1950	1,649,462,088	1,826,346,222	3,475,808,310[1]
1941	1,697,545,699	1,699.942,865	3,397,488.564	1951	1,646,205,772	1,925.488.160	3,571,693,932[1]
1942	1,578,254,765	1,793,579.270	3,371,834,035	1952[2]	2,406,309,060	1,308,899,612	3,715,208,672[1]
1943	1,614,936.131	1,741,664,036	3,356,600,167	1953	2,422,692,856	1,439,063,402	3,861,756,258[1]
1944	1,636,064,822	1,707,801,676	3,343,866,498	1954	2,499,778,848	1,475.815,267	3,975,594,115[1]
1945	1,631,973.055	1,701,786,899	3,333,759,954	1955	2,543,465,586	1,565,109,030	4,108,574,616[1]
1946	1,624,753,709	1,665,844,138	3,290,597,847	1956	2,572,487,313	1,612,706,551	4,185,193,864[1]
1947	1,623,607,219	1,685,010,672	3,308,617,891	1957	2,565,559,683	1,764,660,210	4,330,219,893[1]
1948	1,578,057,474	1,672,282,030	3,250.339.504	1958	2,646,659,697	1,953,114,826	4,599,774,523[1]
1949	1,576,734,292	1,692,898,968	3,269,633,260[1]	1959	2,669,062,269	2,122,675,213	4,791,737,482[1]

[1] Exclusive of approximately $40,000,000 railway debt in Newfoundland assumed in 1949. [2] Affected by readjustment in the capital structure of the CNR (see p. 789).

4.—Capital Invested in Railway Road and Equipment Property, 1955-59

Investment	1955	1956r	1957r	1958r	1959
	$	$	$	$	$
Road	41,034,168	279,853,243	229,947,245	174,390,919	134,825,113
Equipment	77,802,675	148,235,337	189,383,255	133,610,475	78,487,442
General	Cr. 316,406	7,871,446	Cr. 77,635,769	Cr. 1,673,544	Cr. 816,428
Undistributed	Cr. 12,615,995	12,098,201	16,761,171	2,253,817	42,728,016
CNR non-rail property	*Cr. 12,153,325*	*6,245,238*	*6,573,570*	*6,017,011*	*1,861,030*
CPR " "	*Cr. 447,000*	*5,790,522*	*9,943,881*	*Cr. 3,825,030*	*36,878,761*
Other " "	*Cr. 15,670*	*62,441*	*243,720*	*61,836*	*3,988,225*
Totals	**105,904,442**	**448,058,227**	**358,455,902**	**308,581,667**	**255,224,143**
Cumulative Investment to Dec. 31.	4,777,279,050[1]	5,445,804,080[2]	5,815,448,817[3]	6,124,030,484	6,379,254,627

[1] Includes investments totalling $121,230,690 of the Quebec North Shore and Labrador Railway which reported for the first time in 1955. [2] A restatement of investment totals by a number of roads adopting the new Uniform Classification of Accounts in 1956 increased the cumulative figure by $220,466,803; a distribution of this amount is not available. [3] Includes investments totalling $11,188,835 of the British Columbia Electric Railway which reported for the first time in 1957.

Revenues and Expenses.—The ratio of expenses to revenues of railways operating in Canada was 95.24 p.c. in 1959 compared with 86.94 p.c. ten years previously; the high for the period 1950-59 was 97.30 p.c. recorded in 1958. The trend of both revenues and expenses was generally upward during the period, revenues increasing by 27.7 p.c. and expenses by 39.9 p.c. The high point for operating revenues was reached in 1956. Because outlay increased more rapidly than income during the ten years, the net operating revenue per mile of line dropped from $2,914 in 1950 to $1,289 in 1959, although the lowest figure during the period was recorded in 1958 at $696.

5.—Operating Revenues and Expenses of Railways, 1950-59

NOTE.—Operating revenues and expenses from 1875 are given in previous editions of the Year Book beginning with the 1916-17 edition.

Year	Total Operating Revenues	Total Operating Expenses	Ratio of Operating Expenses to Operating Revenues	Per Mile of Line			Freight Train Revenue per Freight Train Mile	Passenger Train Revenue per Passenger Train Mile
				Operating Revenues	Operating Expenses	Net Operating Revenues		
	$	$	p.c.	$	$	$	$	$
1950	958,985,751	833,726,562[1]	86.94	22,311	19,397	2,914	9.45	3.19
1951	1,088,583,789	977,577,062[1]	89.80	25,348	22,763	2,585	10.05	3.36
1952	1,172,158,665	1,057,186,304[1]	90.19	27,272	24,597	2,675	10.56	3.50
1953	1,205,935,414	1,100,393,836[1]	91.25	28,020	25,567	2,453	11.43	3.53
1954	1,095,440,918	1,019,534,989[1]	93.07	25,402	23,642	1,760	11.58	3.44
1955	1,198,351,601	1,048,564,681[1]	87.50	26,876	23,517	3,359	12.21	3.60
1956	1,300,623,923	1,171,338,574	90.06	29,047	26,159	2,888	12.75	3.16
1957	1,263,147,930	1,203,530,146	95.28	28,171	26,841	1,330	13.85	3.30
1958	1,163,735,417	1,132,277,504	97.30	25,766	25,070	696	14.51	3.11
1959	1,224,567,928	1,166,306,724	95.24	27,093	25,804	1,289	15.48	3.29

[1] Excludes equipment rents, joint facility rents and tax accruals.

6.—Distribution of Operating Expenses of Railways, 1957-59

Item	1957		1958		1959	
	$	p.c.	$	p.c.	$	p.c.
Road maintenance	265,104,802	22.0	248,593,455	21.9	259,958,839	22.3
Equipment maintenance	256,689,993	21.3	253,744,614	22.4	256,778,520	22.0
Traffic	27,334,536	2.3	27,208,205	2.4	29,140,473	2.5
Transportation	478,428,123	39.8	440,116,687	38.9	443,292,012	38.0
General and miscellaneous	109,329,484	9.1	110,677,500	9.8	113,955,685	9.8
Rents and taxes[1]	66,643,208	5.5	51,937,043	4.6	63,181,195	5.4
Totals	**1,203,530,146**	**100.0**	**1,132,277,504**	**100.0**	**1,166,306,724**	**100.0**

[1] Reported as operating expenses in accordance with the Uniform Classification of Accounts adopted in 1956.

Employment and Salaries and Wages.—During the period 1950-58 the number of railway employees fluctuated between a low of 190,385 in 1950 and a high of 215,324 in 1956; the 1959 figure was slightly below that of 1950. In the same period annual average salaries and wages increased almost steadily from $2,747 to $4,150. Maintenance-of-equipment employees, on hourly rates, worked 16 p.c. fewer average hours and were paid 87 p.c. more wages per hour; average hours worked by transportation employees were 15 p.c. fewer, while their pay per hour was about 77 p.c. higher. These figures reflect salary and wage increases and the effects on employment of the five-day work week inaugurated in 1951. Statistics from 1956 have been reported in accordance with the revised "Canadian Classification of Railway Employees and Their Compensation" which became effective Jan. 1, 1956.

7.—Railway Employees and Their Earnings, 1950-59

NOTE.—Figures include employees and wages for 'outside' operations amounting to from 3 to 6 p.c. of total employees and from 2 to 5 p.c. of total salaries and wages. Figures for 1912-39 are given in the 1941 Year Book, p. 551, and for 1940-49 in the 1951 edition, p. 723.

Year	Employees	Total Salaries and Wages	Average Salaries and Wages	Ratio of Total Payroll (charged to operating expenses) to—	
				Operating Revenues	Operating Expenses
	No.	$	$	p.c.	p.c.
1950	190,385	523,008,515	2,747	49.8	57.2
1951	204,025	624,682,754	3,062	52.0	58.0
1952	214,143	669,457,962	3,126	52.1	57.7
1953	211,951	724,077,594	3,416	53.4	58.6
1954	196,307	661,829,774	3,371	54.3	58.3
1955	195,459	674,875,767	3,453	50.2	57.4
1956	215,324[1]	780,135,918	3,623	50.6	55.9
1957	212,426[1]	791,529,117	3,726	51.4	53.9
1958	192,809[1]	757,907,896	3,931	52.7	54.3
1959	187,981[1]	780,031,534	4,150	51.5	54.2

[1] Includes employees engaged in cartage and highway transport (rail) operations.

Government Aid to Railways.—In order that the private railways of Canada might be constructed in advance of settlement as colonization roads or through sparsely settled districts where little traffic was available, it was necessary for federal and provincial governments and even for municipalities to extend some form of assistance. The form of aid was usually a bonus of a fixed amount for each mile of railway constructed and, in the early days, grants of land were also made other than for right-of-way. As the country developed, objections to the land-grant method became increasingly apparent and aid was given more frequently in the form of a cash subsidy for each mile of line, a loan or a subscription to the shares of the railway. Guarantees of debenture issues were given in a later period and, since the formation of the Canadian National Railways, all debenture issues of that System, except those for rolling-stock, have been guaranteed by the Federal Government. No new land grants or cash subsidies have been advanced by either the federal or provincial governments since 1939.

During the era of railway expansion before 1918, provincial governments guaranteed the bonds of some railway lines that afterwards were incorporated in the Canadian National Railway System. These bonds as they mature or are called are paid off by the Canadian National Railways, in large measure through funds raised by the issue of new bonds with Federal Government guarantee. Bonds guaranteed by the Governments of New Brunswick, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia have been eliminated in this manner in recent years. Railway bonds guaranteed by the Government of Canada at Dec. 31, 1959 amounted to $1,335,510,205; this amount includes $97,756 perpetual debenture stock and guaranteed stock of the former Grand Trunk Railway, now part of the Canadian National Railway System, on which interest and dividends are guaranteed by the Federal Government.

Subsection 3.—Passenger and Freight Traffic

Tables 8 and 9 show passenger and freight statistics for all railways for the years 1950-59. A separate analysis of the operations and traffic of the Canadian National Railways is given at pp. 789-792.

8.—Statistics of Passenger Service and Revenue, 1950-59

Year	Revenue Passenger-Train Miles[1]	Passenger-Train Car Miles[1]	Passengers Carried[2]	Passenger Miles	Passenger Miles per Mile of Line
	No.	No.	No.	No.	No.
1950	43,744,164	392,800,555	31,139,092	2,816,154,232	65,519
1951	46,200,947	415,178,734	30,995,604	3,110,240,504	72,424
1952	47,663,617	431,234,562	30,167,145	3,151,261,385	73,319
1953	46,977,271	430,726,717	28,736,159	2,985,943,809	69,378
1954	45,745,089	416,969,275	28,396,528	2,863,036,611	66,391
1955	44,556,022	417,729,975	27,229,962	2,891,685,018	64,853
1956	43,782,624	420,687,663	26,070,766	2,907,568,012	64,934
1957	41,629,954	409,175,053	22,965,974	2,925,132,819	65,236
1958	40,545,723	382,340,605	21,376,438	2,485,860,569	55,040
1959	38,212,310	367,551,267	20,939,928	2,445,654,114	54,109
	Average Receipts per Passenger Mile	Average Receipts per Passenger	Average Passenger Journey	Average Passengers per Train	Passenger-Train Revenue per Passenger-Train Mile
	cts.	$	miles	No.	$
1950	2.79	2.52	90	64	3.19
1951	2.86	2.87	100	67	3.36
1952	2.88	3.01	104	66	3.50
1953	2.88	2.99	104	64	3.53
1954	2.87	2.89	101	63	3.44
1955	2.87	3.05	106	65	3.60
1956	2.93	3.27	112	66	3.16
1957	2.97	3.78	127	70	3.30
1958	3.11	3.62	116	61	3.11
1959	3.01	3.51	117	64	3.29

[1] Includes express, baggage, mail and other cars.

[2] Duplications included.

9.—Statistics of Freight Service and Revenue, 1950-59

Year	Revenue Freight-Train Miles	Revenue Freight-Train Car Miles[1]	Freight Carried[2]	Freight Ton-Miles	Freight Ton-Miles per Mile of Line
	No.	No.	tons	No..	No.
1950	81,397,148	3,093,946,961	144,218,319	55,537,900,000	1,292,120
1951	87,181,640	3,384,341,192	161,260,521	64,300,418,000	1,497,274
1952	89,217,123	3,551,802,171	162,175,381	68,430,417,000	1,592,146
1953	84,997,904	3,448,530,542	156,249,259	65,267,016,000	1,516,462
1954	75,334,248	3,088,504,846	143,194,840	57,547,300,439	1,333,216
1955	79,072,523	3,414,942,330	167,862,156	66,176,128,925	1,483,273
1956	87,088,493	3,890,694,617	189,608,272	78,819,966,395	1,760,135
1957	77,991,848	3,540,096,145	174,163,028	71,047,229,093	1,584,343
1958	68,655,553	3,324,507,990	153,524,948	66,356,829,403	1,469,050
1959	68,351,068	3,322,166,683	166,186,216	67,956,540,372	1,503,362

Year	Freight Receipts per Ton per Mile	Receipts per Ton Hauled	Average Length of Freight Haul	Average Train Load, Revenue Tons	Average Load per Loaded Car Mile	Revenue per Freight-Train Mile
	cts.	$	miles	tons	tons	$
1950	1.385	5.33	385	682	28.91	9.45
1951	1.362	5.43	399	738	30.61	10.05
1952	1.377	5.81	422	767	31.68	10.56
1953	1.489	6.22	418	768	31.16	11.43
1954	1.516	6.09	402	764	30.34	11.58
1955	1.460	5.75	394	837	31.30	12.21
1956	1.409	5.85	416	905	33.12	12.75
1957	1.520	6.21	408	911	32.86	13.85
1958	1.501	6.49	432	967	32.35	14.51
1959	1.557	6.37	409	994	33.31	15.48

[1] Includes caboose miles but excludes miles made in passenger and non-revenue trains. [2] Excludes traffic handled by more than one railway; see Table **10** for details of freight carried.

The total tonnage of freight carried was 8.2 p.c. higher in 1959 than in 1958. Among the main commodity groups, agricultural products and animal products recorded decreases but mine products were up 18.8 p.c., forest products 1.2 p.c. and manufactures and miscellaneous products 5.6 p.c. Of the 166,095,149 tons moved in 1959 (excluding freight handled by more than one railway and in intermediate switching), mine products accounted for 42.9 p.c., manufactures and miscellaneous products for 29.6 p.c., agricultural products 16.8 p.c., forest products 8.9 p.c., animal products 0.9 p.c. and less than carload freight for 0.9 p.c.

10.—Commodities Hauled as Freight on Railways, 1956-59

Note.—In this table duplications are eliminated, i.e., the same freight handled by two or more railways is counted only once. The statistics do not include the United States lines of the Canadian National Railways, but the link of the Canadian Pacific Railway line across Maine, U.S.A., is included, as are the Canadian sections of United States railways.

Commodity	1956	1957	1958	1959
	tons	tons	tons	tons
Agricultural Products	**34,770,962**	**28,376,417**	**29,309,235**	**27,988,690**
Wheat	16,325,517	13,160,234	14,553,875	13,794,365
Oats	1,811,875	1,709,666	1,490,516	1,372,154
Other grain	6,011,812	5,136,833	5,181,033	4,906,172
Flour, wheat	1,428,791	1,449,408	1,629,846	1,689,048
Other mill products	4,104,575	2,057,225	1,887,424	1,708,274
Other agricultural products	5,088,392	4,863,051	4,566,541	4,518,677
Animal Products	**2,085,204**	**1,939,952**	**1,634,878**	**1,571,388**
Livestock	652,005	654,985	605,105	507,389
Meats and other edible packing-house products	698,508	645,307	506,288	550,999
Other animal products	734,691	639,660	523,485	513,000

10.—Commodities Hauled as Freight on Railways, 1956-59—concluded

Commodity	1956	1957	1958	1959
	tons	tons	tons	tons
Mine Products	**78,396,685**	**73,322,895**	**59,895,924**	**71,178,434**
Coal, anthracite	2,976,996	2,129,366	1,615,401	1,555,774
Coal, bituminous, subbituminous, lignite	15,875,557	14,657,576	12,854,100	11,949,461
Coke	2,059,478	2,107,206	1,585,402	1,581,553
Ores and concentrates	30,895,963	29,266,699	21,287,157	30,840,791
Sand and gravel	6,375,001	6,704,330	6,997,118	6,442,813
Stone (crushed, ground, broken)	4,372,832	7,777,451	7,017,430	6,694,809
Other mine products	15,840,858	10,680,267	8,539,316	12,113,233
Forest Products	**18,958,045**	**16,645,960**	**14,556,917**	**14,736,118**
Logs, posts, poles, piling and ties	2,228,379	2,193,371	1,946,490	2,105,792
Cordwood and other firewood	73,266	45,736	31,007	27,651
Pulpwood	7,172,754	6,544,706	4,731,075	4,121,483
Lumber, timber, box, crate and cooperage material	8,353,301	6,797,042	6,802,421	7,282,234
Other forest products	1,130,345	1,065,105	1,045,924	1,198,958
Manufactures and Miscellaneous	**53,113,053**	**51,690,052**	**46,534,971**	**49,162,943**
Gasoline and petroleum products	9,357,348	8,790,643	8,402,525	8,325,030
Iron and steel (bar, sheet, structural, pipe)	5,490,354	5,584,331	3,672,395	4,234,303
Automobiles, trucks and parts	2,428,709	2,132,072	1,518,229	1,809,106
Newsprint	4,578,441	4,573,228	4,115,818	4,256,951
Wood pulp	2,659,767	2,479,597	2,312,458	2,547,531
Other manufactures and miscellaneous	28,598,434	28,130,181	26,513,546	27,990,022
Less than Carload Lots	**2,284,323**	**2,068,885**	**1,509,831**	**1,457,576**
Grand Totals	**189,608,272**	**174,044,161**	**153,441,756**	**166,095,149**

Railway Accidents.—The figures given in Tables **11** and **12** of persons killed or injured on railways include those involved in both train and non-train accidents. All passengers injured are included in the figures but, for employees, only those that kept the employee from his work for at least three days during the ten days following the accident are recorded.

11.—Passengers, Employees and Others Killed or Injured on Railways, 1950-59

NOTE.—Figures for 1919-49 are given in the corresponding tables of previous Year Books beginning with the 1922-23 edition.

Year	Passengers		Employees		Others[1]		Totals	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
	No.	No.	No.	No.	No.	No.	No.	No.
1950	18	297	67	8,108	232	744	317	9,149
1951	5	221	84	7,651	301	723	390	8,595
1952	2	183	74	7,019	317	707	393	7,909
1953	4	181	35	5,917	266	727	305	6,825
1954	4	251	48	4,654	245	586	297	5,491
1955	1	235	48	4,467	258	552	307	5,254
1956	7	126	71	4,378	301	649	379	5,153
1957	2	193	36	4,082	287	580	325	4,855
1958	1	124	46	3,315	280	445	327	3,884
1959	9	193	42	3,256	265	627	316	4,076

[1] Includes postal, express and pullman employees, trespassers and others.

Accidents tabulated include all those in which railway trains were involved and accidents on railway property. The classification of accidents used for DBS vital statistics treats collisions between motor vehicles and trains as motor vehicle accidents; provincial statistics also class them as motor vehicle accidents and consequently adjustments should be made when compiling total accidental deaths of all kinds or comparing results of accidents of different kinds, such as train and motor vehicle.

12.—Persons Killed or Injured on Railways, by Specified Cause, 1957-59

Class of Person and Description of Accident	1957 Killed	1957 Injured	1958 Killed	1958 Injured	1959 Killed	1959 Injured
	Accidents Resulting from Movement of Trains, Locomotives or Cars					
	No.	No.	No.	No.	No.	No.
Class of Person—						
Passengers	2	143	1	83	9	151
Employees	27	1,348	33	1,016	30	1,092
Trespassers	84	77	78	51	65	56
Non-trespassers	197	432	192	299	196	505
Postal clerks, expressmen, etc.	—	18	—	13	3	14
Totals	**310**	**2,018**	**304**	**1,462**	**303**	**1,818**
Description of Accidents (Employees and Passengers only)—						
Coupling and uncoupling	—	67	3	46	—	50
Collisions	10	99	6	58	15	188
Derailments	2	110	2	40	4	44
Locomotives or cars breaking down	—	6	—	1	—	18
Falling from trains or cars	4	76	7	79	2	80
Getting on or off trains	2	341	3	255	1	247
Struck by trains, etc.	4	24	7	20	11	17
Overhead and other obstruction	2	28	—	11	3	26
Other causes	5	740	6	589	3	573
Totals	**29**	**1,491**	**34**	**1,099**	**39**	**1,243**
	All Other Accidents					
	No.	No.	No.	No.	No.	No.
Class of Person—						
Stationmen	—	272	2	256	—	239
Shopmen	2	1,016	2	764	3	739
Trackmen	5	919	7	836	8	760
Other employees	2	527	2	443	1	426
Passengers	—	50	—	41	—	42
Others	6	53	10	82	1	52
Totals	**15**	**2,837**	**23**	**2,422**	**13**	**2,258**

Subsection 4.—The Canadian National Railway System*

In view of the interest in Canada's publicly owned railway, the Canadian National Railway System is given separate treatment in this Subsection. Its history is presented in a special article published in the 1955 Year Book at pp. 840-847. More detailed information than can be given here is obtainable from DBS annual report *Canadian National Railways* (Catalogue No. 52-201).

Financial Statistics.—The original financial structure of the CNR and the steps taken through the Capital Revision Acts of 1937 and 1952 to alleviate the burden of interest debt undertaken by the company on its formation in 1923 are described in the special article mentioned above. Briefly, the Capital Revision Act of 1937 wrote off all loans that had been made to cover deficits and also unpaid interest on loans, and certain loans made for the purpose of additions and betterments were converted to equity capital, relieving the CNR from paying fixed charges on this amount. Under the 1952 Capital Revision Act, 50 p.c. of the company's interest-bearing debt was changed to preferred stock on which, after settling income taxes, a dividend of 4 p.c. is paid on earnings. Also, for a term of ten years ending Dec. 31, 1961, the Railway is not obliged to pay interest on $100,000,000 of its long-term debt. The Government is authorized to buy additional preferred stock annually in amounts related to the company's gross revenues. As a consequence, the proportion of total capitalization represented by equity capital in shareholders' account was raised from 34.5 p.c. at Dec. 31, 1951 to 67.2 p.c. at Jan. 1, 1952, and the proportion of borrowed capital was correspondingly reduced.

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* The Hudson Bay Railway, formerly managed and operated for the Federal Government by the CNR, was absorbed into the Canadian National Railway System on Jan. 1, 1958, to be operated in the same manner as other Canadian Government railway lines. Statistics of the Hudson Bay Railway are therefore included with CNR data for 1958 and subsequent years.

13.—Capital Structure of the Canadian National Railway System as at Dec. 31, 1951-60

At Dec. 31—	Shareholders' Capital		Funded Debt Held by Public		Government Loans and Appropriations—Active Assets in Public Accounts	Totals
	Government of Canada Shareholders' Account	Capital Stock Held by Public	Guaranteed by Federal and Provincial Governments	Other		
	$	$	$	$	$	$
1951	776,395,649	4,518,890	518,396,607	96,800,428	857,573,774	2,253,685,348
1952	1,531,072,324	4,516,490	518,396,607	87,098,222	228,055,165	2,369,138,808
1953	1,552,050,067	4,514,490	513,977,391	75,834,299	342,140,048	2,488,516,295
1954	1,571,393,181	4,514,490	910,422,885	62,546,711	126,771,981	2,675,649,248
1955	1,591,902,624	4,511,150	861,870,899	34,493,192	199,444,622	2,692,222,487
1956	1,616,270,966	4,508,670	794,482,906	25,086,606	353,664,828	2,794,013,976
1957	1,639,451,306	4,505,870	730,346,711	17,978,788	623,967,851	3,016,250,526
1958	1,704,387,845	4,504,203	1,024,710,205	9,098,765	484,791,699	3,227,492,717
1959	1,723,909,722	4,503,549	1,335,510,205	5,548,765	345,684,052	3,415,156,293
1960	1,721,143,162	4,499,284	1,677,209,478	3,098,765	148,021,700	3,553,972,389

In Table 14 the assets of the Canadian National Railway System as at Dec. 31, 1959 and 1960 are compared with those at the time of consolidation of the System.

14.—Assets of the Canadian National Railway System as at Dec. 31, 1922, 1959 and 1960

NOTE.—Based on the revised Uniform Classification of Accounts adopted in 1956.

Account	Dec. 31, 1922	Dec. 31, 1959	Increase or Decrease 1922 to 1959	Dec. 31, 1960	Increase or Decrease 1922 to 1960
	$	$	$	$	$
Current Assets	**87,580,218**	**194,628,374**	**107,048,156**	**192,815,088**	**105,234,870**
Cash	14,651,422	18,906,089	4,254,667	24,239,062	9,587,640
Special deposits	6,139,435	73,374	−6,066,061	246,704	−5,892,731
Traffic accounts receivable	2,528,622	4,229,018	1,700,396	4,827,579	2,298,957
Agent and conductor balances	5,386,673	32,336,374	26,949,701	28,191,358	22,804,685
Other accounts receivable	16,981,289[1]	27,661,703	10,680,414	30,770,648	13,789,359
Government of Canada due on deficit account	—	6,588,290	6,588,290	2,496,777	2,496,777
Material and supplies	41,408,999	90,553,557	49,144,558	84,605,144	43,196,145
Interest and dividends receivable	377,003	2,098,251	1,721,248	3,239,419	2,862,416
Other current assets	106,775	12,181,718	12,074,943	14,198,397	14,091,622
Investments	**1,842,428,131**	**3,922,415,816**	**2,079,987,685**	**4,057,044,937**	**2,214,616,806**
Road and equipment property	1,765,323,644	3,636,937,956	1,871,614,312	3,689,214,173	1,923,890,529
Improvements on leased property	1,492,123	1,325,768	−166,355	1,323,539	−168,584
Acquisition adjustment — U.S. lines	—	Cr. 3,776,424	−3,776,424	Cr. 3,776,424	−3,776,424
Non-rail property	34,767,914	99,119,545	64,351,631	105,658,286	70,890,372
Capital and other reserve funds	6,171,808	511	−6,171,297	523	−6,171,285
Investments in affiliated companies	24,253,323	187,138,888	162,885,565	262,368,504	238,115,181
Other investments	10,419,319	1,669,572	−8,749,747	2,256,336	−8,162,983
Deferred Assets	**12,325,297**	**36,255,389**	**23,930,092**	**42,517,893**	**30,192,596**
Working fund advances	166,847	815,699	648,852	837,791	670,944
Insurance and other funds	352,488	15,000,000	14,647,512	15,000,000	14,647,512
Other deferred assets	11,805,962	20,439,690	8,633,728	26,680,102	14,874,140
Unadjusted Debits	**15,697,557**	**36,580,270**	**20,882,713**	**41,839,324**	**26,141,767**
Prepayments	322,059	2,758,241	2,436,182	2,697,728	2,375,669
Discount on funded debt	1,919,635	20,255,921	18,336,286	26,762,278	24,842,643
Other unadjusted debits	13,455,863	13,566,108	110,245	12,379,318	−1,076,545
Grand Totals	**1,958,031,203**	**4,189,879,849**	**2,231,848,646**	**4,334,217,242**	**2,376,186,039**

[1] Includes "loans and bills receivable" and "rents receivable".

The financial details presented in Table **15** are those of the entire Canadian National Railway System, including both Canadian and United States operations. Revenues and expenses include those of express and commercial communications throughout, and highway transport (rail) operations from 1956. In conformity with the requirements of the Uniform Classification of Accounts, tax accruals and rents have been charged to operating expenses since Jan. 1, 1956.

15.—Total Revenue, Operating Expenses, Net Revenue, Fixed Charges and Deficits of the Canadian National Railway System,[1] 1951-60

Note.—Figures for 1911-25 are given in the 1936 Year Book, p. 660; for 1926-39 in the 1942 Year Book, p. 590; for 1940-48 in the 1951 edition, p. 731; and for 1949-50 in the 1960 edition, p. 819.

Year	Total Operating Revenue	Total Operating Expenses	Income Available for Fixed Charges	Total Fixed Charges	Net Income or Deficit[2]	Cash Deficit or Surplus[3]
	$	$	$	$	$	$
1951	624,834,120	580,150,221	31,722,489	48,176,558	Dr. 16,454,069	Dr. 15,031,996
1952	675,219,415	634,852,915	25,702,660	25,415,189	Cr. 287,471	Cr. 142,327
1953	696,622,451	659,049,086	29,238,623	29,376,160	Dr. 137,537	" 244.017
1954	640,637,280	626,465,374	7,574,821	32,527,264	" 24,952,443	Dr. 28,758,098
1955	683,088,794	629,013,125	43,478,955	33,004,300	Cr. 10,474,655	Cr. 10,717,689
1956	774,800,647	728,008,837	57,623,710	31,782,991	" 25,840,719	" 26,076,951
1957	753,165,964	755,214,378	6,913,660	36,971,680	Dr. 30,058,020	Dr. 29,572,541
1958	704,947,410	719,211,865	Dr. 4,779,895	46,521,236	" 51,301,131	" 51,591,424
1959	740,165,041	741,852,260	5,209,509	52,512,649	" 47,303,140	" 43,588,290
1960	693,141,106	705,818,310	Dr. 6,473,732	69,088,803	" 75,562,535	" 67,496,777

[1] Includes the Central Vermont Railway, Incorporated to 1956; operations of this line were terminated November 1955. [2] Includes appropriations for insurance fund. [3] Contributed by or paid to the Federal Government.

Milage and Traffic.—At Dec. 31, 1960, first main track milage of the Canadian National Railways (including electric lines and lines in the United States but excluding lines of the Northern Alberta Railways and Toronto Terminals Railway controlled jointly by the Canadian National and the Canadian Pacific Railways) was 24,979 miles.

16.—Train Traffic Statistics of the Canadian National Railways (Canadian and United States Lines), 1957-60

Note.—Includes electric lines.

Milage		1957	1958	1959	1960
Train Milage	**miles**	**68,133,477**	**62,732,107**	**62,556,301**	**57,525,935**
Passenger service	"	23,820,127	23,075,444	22,394,255	21,292,408
Freight service	"	42,073,087	37,507,065	37,754,181	34,379,411
Work service	"	2,240,263	2,149,598	2,407,865	1,854,116
Passenger-Train Car Milage	**miles**	**235,129,921**	**219,959,605**	**217,727,131**	**211,939,049**
Coaches and combination (excl. work service)	"	58,647,757	54,026,074	51,682,574	49,618,353
Motor unit cars	"	2,293,943	3,895,660	4,153,329	3,913,225
Parlour, sleeping and dining cars	"	68,480,708	59,647,337	59,225,517	57,198,952
Baggage, mail, express, etc.	"	105,707,513	102,390,534	102,665,711	101,208,519

16.—Train Traffic Statistics of the Canadian National Railways (Canadian and United States Lines), 1957-60—concluded

Milage and Traffic		1957	1958	1959	1960
Freight-Train Car Milage	miles	**1,956,953,773**	**1,856,288,249**	**1,851,192,256**	**1,774,972,100**
Loaded freight	"	1,268,986,013	1,193,097,849	1,171,769,671	1,099,465,199
Empty freight	"	645,428,815	625,314,743	641,624,285	640,812,172
Caboose	"	42,538,945	37,875,657	37,798,300	34,694,729
Work-Train Car Milage	miles	**4,977,773**	**7,361,184**	**5,042,176**	**4,391,784**
Passenger Traffic—					
Passengers carried (earning revenue)	No.	13,920,236	12,737,113	12,693,777	12,023,530
Passengers carried (earning revenue) one mile	"	1,498,655,566	1,268,780,666	1,272,152,625	1,201,314,291
Passenger-miles per mile of road	"	61,719	50,993	51,115	48,159
Average passenger journey	miles	107.66	99.61	100.22	99.91
Average amount received per passenger	$	3.36	3.26	3.17	3.19
Average amount received per passenger mile	$	0.03124	0.03270	0.03159	0.03190
Freight Traffic—					
Revenue freight carried	tons	88,880,881	79,486,001	82,202,096	77,688,926
Revenue freight carried one mile	"	36,673,910,825	35,076,836,756	35,542,136,785	34,011,491,932
Revenue freight carried one mile per mile of road	"	1,504,385	1,404,774	1,423,304	1,358,680
Total (all classes) freight carried one mile per mile of road	"	1,587,684	1,467,772	1,473,014	1,400,758
Average hauls revenue freight	miles	412.62	441.30	433.25	437.79
Gross ton miles per freight train hour	No.	37,017	41,764	42,937	46,628
Freight revenue per ton	$	6.61	6.86	6.99	6.77
Freight revenue per ton mile	$	0.01601	0.01554	0.01613	0.01547

Section 2.—Express Companies

Express, which is actually expedited freight carried on passenger trains, is one of the services provided by companies which do not own the means of conveyance but use the facilities of railway companies under contract. The majority of such contracts provide for payment to the railways of a fixed percentage of the gross express revenue.

Express companies are organized under authority of federal legislation and their business concerns the rapid transit of valuable or perishable commodities and animals, the delivery of parcels and the issuing of financial papers, money orders, travellers cheques and letters of credit. Express rates are usually much higher than freight rates and the two services are not normally competitive. Both tariffs are subject to the approval of the Board of Transport Commissioners.

Five express organizations operate in Canada—four Canadian and one American. The Canadian Pacific Express Company is a subsidiary of the Canadian Pacific Railway Company and handles the express business on the railways and the inland and ocean steamship lines of the parent company. The express business of the Algoma Central and Hudson Bay Railway, the Canadian National Railway System, and the Northern Alberta Railways is handled by departments of the respective railways. The Railway Express Agency Incorporated of the United States operates over the Canadian sections of United States railways and over the route from Skagway in Alaska to points in Yukon Territory. Operations of the Algoma Central and Hudson Bay Railway express department were reported for the first time in 1957. No statistics are available on the volume of express traffic because much of it consists of parcels and small lots that cannot be classified.

17.—Summary Statistics of Express Companies, 1950-59

NOTE.—Figures for 1911-49 are given in the corresponding table of previous Year Books beginning with the 1927-28 edition.

Year or Company	Milages Operated in Canada[1]	Gross Earnings	Operating Expenses[2]	Express Privileges[3]	Net Operating Revenue
	No.	$	$	$	$
1950	55,581	52,017,492	32,881,689	21,355,956	Dr. 2,220,153
1951	57,355	60,423,503	38,374,128	21,037,164	1,012,211
1952	57,335	70,185,114	44,744,018	24,428,739	1,012,357
1953	55,805	74,296,948	49,569,842	23,584,806	1,142,300
1954	68,373	70,039,054	48,167,243	20,753,503	1,118,308
1955	65,916	73,434,962	48,726,272	23,533,770	1,174,920
1956	67,984	88,012,718	60,180,066	27,114,672	717,980
1957	65,516	85,630,963	61,385,390	23,870,836	374,737
1958	65,982	86,558,161	62,120,291	23,797,450	640,420
1959	67,523	88,834,704	63,194,957	25,061,221	578,526
1959					
Algoma Central and Hudson Bay Rly.	322	127,742	82,749	22,800	22,193
Canadian National Express	45,359	44,492,817	32,083,831	12,002,653	406,333
Canadian Pacific Express	18,274	38,675,600	27,492,161	11,033,439	150,000
Northern Alberta Railways	928	566,372	314,469	251,903	—
Railway Express Agency, Inc. (U.S.A.)	2,639	4,972,173	3,221,747	1,750,426	—

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[1] Over railways, boat lines, motor carrier and aircraft routes. [2] Includes tax accruals from 1956 in accordance with the Uniform Classification of Accounts adopted Jan. 1, 1956. [3] Amounts paid by express companies to the carriers, i.e., railways, steamship lines, etc., for transporting express matter.

18.—Business Transacted by Express Companies in Financial Paper, 1955-59

Item	1955	1956	1957	1958	1959
	$	$	$	$	$
Money orders, domestic and foreign	133,479,411	137,713,945	134,742,142	133,303,403	126,470,170
Travellers cheques, domestic and foreign	8,110,137	8,450,960	9,047,823	9,096,103	9,288,616
C.O.D. cheques	20,656,753	19,985,044	18,417,906	20,117,337	19,134,412
Telegraphic transfers	167,577	140,283	488,156	129,420	142,728
Totals	**162,413,878**	**166,290,232**	**162,696,027**	**162,646,263**	**155,035,926**

19.—Employees, Salaries, Wages and Commissions of Express Companies, 1950-59

Year	Employees[1]	Salaries and Wages[1]	Commissions Paid	Year	Employees[1]	Salaries and Wages[1]	Commissions Paid
	No.	$	$		No.	$	$
1950	8,974	24,195,490	2,177,933	1955	11,593	36,200,739	2,745,259
1951	9,610	28,607,463	2,443,341	1956	12,448	40,981,769	3,044,285
1952	10,849	32,503,058	2,689,830	1957	12,133	42,172,398	2,930,514
1953	12,119	37,413,060	2,795,766	1958	11,507	42,460,212	2,963,996
1954	11,450	35,882,288	2,691,440	1959	11,411	42,673,976	2,985,627

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[1] Full-time employees only for 1950-53 and all employees, including part-time, for 1954-59.

Section 3.—Urban Transit Systems

The collection of statistical information on urban transportation systems has been extensively reorganized in the past few years. Because of major changes made recently in the types of vehicles used for mass passenger movement in urban centres, the statistical series that began with the financial and operating statistics of electric railways and later included their motor bus and trolley coach lines, became quite inadequate. The current series, which was started in 1956, includes operations of motor buses, trolley coaches, streetcars and subway cars carrying passengers in urban and suburban service.

20.—Summary Statistics of Urban Transit Systems, 1956-59

Item		1956	1957	1958	1959
Passengers Carried	**No.**	**1,151,928,811**	**1,125,608,597**	**1,079,712,025**	**1,056,812,775**
Streetcar	"	307,415,194	256,189,707	218,413,895	173,224,683
Trolley coach	"	242,795,718	235,768,206	214,246,021	201,388,376
Subway car	"	36,224,003	36,579,014	35,932,278	35,869,394
Motor bus	"	557,154,740	589,062,762	603,090,330	637,996,304
Chartered	"	8,339,156	8,008,908	8,029,501	8,334,018
Vehicle-Miles Run	**No.**	**203,888,474**	**204,031,286**	**199,480,833**	**200,085,927**
Streetcar	"	42,347,516	36,371,275	31,029,013	24,676,511
Trolley coach	"	37,811,429	37,453,599	36,878,121	35,874,081
Subway car	"	6,152,164	6,984,792	6,921,792	6,969,728
Motor bus	"	115,055,001	120,789,481	122,489,063	130,122,179
Chartered	"	2,522,364	2,432,139	2,162,844	2,443,428
Fuel Consumed—					
Gasoline	gal.	15,420,219	14,024,296	12,004,077	11,083,205
Propane gas	"	337,383	298,114	284,219	290,166
Diesel oil	"	8,670,913	10,980,414	12,719,288	15,071,113
Gross Passenger Revenue	**$**	**129,213,139**	**133,039,879**	**133,732,764**	**140,195,856**
Passenger Vehicles in Service	**No.**	**6,928**	**7,156**	**7,070**	**7,268**
Streetcar	"	1,493	1,287	1,083	877
Trolley coach	"	1,199	1,221	1,221	1,221
Subway car	"	134	134	136	140
Motor bus	"	4,102	4,514	4,630	5,030

21.—Financial Statistics of Urban Transit Systems, 1956-59

Item		1956	1957	1958	1959
Total assets	$	412,670,989	438,141,862	445,930,475	463,001,240
Long-term debt	$	126,586,525	128,977,536	221,357,256	287,927,330
Capital stock and surplus	$	121,952,853	141,195,724	159,391,975	102,552,156
Operating revenues	$	129,213,139	133,039,879	133,722,764	140,195,856
Operating expenses	$	124,532,196	127,561,604	129,625,050	134,917,105
Ratio of expenses to revenue	p.c.	96.38	95.88	96.93	96.25
Employees	No.	19,758	19,591	19,119	18,899
Salaries and wages	$	74,511,149	76,505,968	78,763,286	82,236,547

22.—Passengers, Employees and Others Killed or Injured on Urban Transit Systems, by Cause of Accident and Equipment Involved, 1959

Item	Passengers		Employees		Others		Total	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
	No.	No.	No.	No.	No.	No.	No.	No.
Cause of Accident—								
Collision	—	244	—	32	24	635	24	911
Boarding (excluding door accidents)	—	369	—	8	—	—	—	377
Alighting (excluding door accidents)	—	727	—	18	—	—	—	745
Caught or struck by doors	—	319	—	—	—	2	—	321
Accidents on board	—	1,931	—	43	—	—	—	1,974
Other	—	73	1	267	—	49	1	389
Totals	**—**	**3,663**	**1**	**368**	**24**	**686**	**25**	**4,717**
Class of Equipment Involved—								
Streetcar	—	411	—	19	3	107	3	537
Trolley coach	—	593	—	50	2	80	2	723
Motor bus	—	2,638	1	90	19	475	20	3,203
Other company equipment	—	21	—	15	—	18	—	54
No vehicle	—	—	—	194	—	6	—	200

PART III.—ROAD TRANSPORT*

Highways and motor vehicles are herein treated as related features of transportation. An introductory section summarizes provincial regulations regarding motor vehicles and motor traffic.

Section 1.—Provincial Motor Vehicle and Traffic Regulations

NOTE.—It is obviously impossible to include here the great mass of detailed regulations in force in each province and territory; only the more important general information is given. The source of information for detailed regulations for each province and territory is given at pp. 797-798.

The registration of motor vehicles and the regulation of motor vehicle traffic lies within the legislative jurisdiction of the provincial and territorial governments. Regulations common to all provinces and territories are summarized as follows.

Operators' Licences.—The operator of a motor vehicle must be over a specified age, usually 16 years (17 in Newfoundland and Quebec, and 18 for class A licence in Alberta), and must carry a licence, obtainable in most provinces only after prescribed qualification tests and renewable annually, except in Alberta and British Columbia where it is renewable every five years, and in New Brunswick and Manitoba where it is renewable every two years. Special licences are required for chauffeurs in all provinces except Newfoundland and in some jurisdictions special licences may be granted to those who have not reached the specified age.

Motor Vehicle Regulations.—In general, all motor vehicles and trailers must be registered annually, with the payment of specified fees, and must carry two registration plates, one on the front and one on the back of the vehicle (one only for the back of trailers). In most provinces, in event of sale the registration plates stay with the vehicle but in Manitoba, Saskatchewan and Alberta the plates are retained by the owner. In Nova Scotia vehicles pass from owner to owner by due process of law and title must be secured before issue of plates and permit. A change of ownership of the vehicle must be recorded with the registration authority. However, exception from registration is granted for a specified period (usually at least 90 days, except in Quebec where the maximum is 90 days and British Columbia where it is six months) in any year to visitors' private vehicles registered in another province or a state that grants reciprocal treatment. Regulations require a safe standard of efficiency in the mechanism of the vehicle and of its brakes and stipulate that equipment include non-glare headlights, a proper rear light, a muffler, a windshield wiper, a rear-vision mirror, and a warning device.

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* Except as otherwise indicated, the material in this Part has been revised in the Transportation Section, Public Finance and Transportation Division .Dominion Bureau of Statistics.

Traffic Regulations.—In all provinces and territories, vehicles keep to the right-hand side of the road. Everywhere motorists are required to observe traffic signs, lights, etc., placed at strategic points on highways and roads. The speed limit in Quebec and New Brunswick is 60 miles an hour in daytime and 55 at night, in Manitoba and Alberta it is 60 in daytime and 50 at night, with the exception of a few selected sections of four-lane highways in Alberta where maximum speeds are 65 in daytime and 55 at night. In Nova Scotia the limit is a "reasonable and prudent" speed, with a maximum of 60 miles an hour. In the other provinces the maximum speed permitted is normally 50 miles an hour. Slower speeds are always required in cities, towns and villages, when passing schools and public playgrounds, at road intersections, railway crossings or at other places or times where the view of the highway for a safe distance ahead is in any way obscured. In almost all provinces, truck speed limits are at least five miles an hour below automobile speed limits. In all provinces and territories, accidents resulting in personal injury or property damage of $100 or more must be reported to a police officer (in Quebec to the Motor Vehicle Service) and a driver involved must not leave the scene of an accident until he has rendered all possible aid and disclosed his name to the injured party.

Driver Licensing Controls.—All provinces impose penalties for infractions of driving regulations, ranging from fines for minor infractions to suspension of the operator's driving permit, impounding of the car, or imprisonment for more serious infractions. In most provinces penalties have been linked to a driver-improvement program, the aim of which is to correct faulty driving habits, not to take drivers off the road. The most common driver-improvement program includes the demerit-point-system.

Safety Responsibility Legislation.—Each province has enacted legislation under this heading (sometimes referred to as financial responsibility legislation). In general, these laws provide for the automatic suspension of the driver's licence and motor vehicle permit of a person convicted of a serious offence (impaired driving, driving under suspension, etc.) or a person involved directly or indirectly in an accident who is not covered for third-party insurance at the time of the accident. The suspension remains effective until any penalty or judgment has been satisfied and proof of financial responsibility for the future is filed. In Manitoba, Saskatchewan, Alberta, British Columbia and the Yukon Territory, uninsured motor vehicles may be impounded following an accident of any consequence, i.e., an accident resulting in personal injury or death, or property damage in excess of $100 ($200 in Saskatchewan and $250 in British Columbia).

Although safety responsibility legislation has not been enacted in the Northwest Territories, the Motor Vehicle Ordinances there require the owner of a motor vehicle residing in the southern Mackenzie District to submit evidence of stipulated insurance coverage on such vehicle before he can obtain registration. In the Yukon Territory, proof of insurance must be supplied before vehicle licence is issued. When the insurance expires or is cancelled, vehicle licence plates must be returned to the Registrar of Motor Vehicles.

Unsatisfied Judgment Fund.—Legislation has been enacted in all provinces except Quebec and Saskatchewan and in the Territories, usually in the form of an amendment to the motor vehicle laws of the province, providing for the establishment of an Unsatisfied Judgment Fund out of which are paid judgments awarded for damages arising out of motor vehicle accidents in the province which cannot be collected in the ordinary process of law. The Fund is created by the collection annually of an Unsatisfied Judgment Fund fee from the registered owner of every motor vehicle or from every person to whom a driver's licence is issued, except in British Columbia and in Nova Scotia where the Fund is maintained by insurance companies. This fee does not exceed $1 per annum except that Ontario collects $5 from each uninsured owner of a motor vehicle at the time of registration. A feature of this legislation which is contained in some provincial statutes provides for the payment of judgments in the so-called 'hit-and-run' accidents. When these occur, if neither the owner nor the driver can be identified, action may be taken against the Registrar of Motor Vehicles; any judgment secured against the Registrar is paid out of the Fund. All of these laws contain a provision limiting the amount that can be paid out of the Fund on one judgment. In Ontario, Alberta and British Columbia the limits are $10,000 for one person and $20,000 for two or more persons injured in one accident. Ontario and Alberta provide for claims up to $2,000 for property damage. In Manitoba the legal limits are $10,000, $20,000 and $1,000, respectively, while other provinces retain lower limits of $5,000, $10,000 and $1,000. For hit-and-run accidents, payments are made for personal injuries or death only.

Sources of information on provincial motor vehicle and traffic regulations:—

Newfoundland

Administration.—Deputy Minister of Finance, St. John's.

Legislation.—The Highway Traffic Act, 1951, as amended.

Prince Edward Island

Administration.—The Provincial Secretary, Charlottetown.

Legislation.—The Highway Traffic Act (RSPEI 1951, c. 73).

Nova Scotia

Administration.—Registry of Motor Vehicles, Department of Highways, Halifax.

Legislation.—The Motor Vehicle Act (1954, c. 184) as amended, and the Motor Carrier Act (RSNS 1923, c. 78) as amended.

New Brunswick

Administration.—Motor Vehicle Division, Provincial Tax Branch, Department of Provincial Secretary-Treasurer, Fredericton.

Legislation.—The Motor Vehicle Act (RSNB 1955) as amended.

Quebec

Administration.—Motor Vehicle Service, Provincial Revenue Offices, Parliament Bldgs., Quebec.

Legislation.—The Highway Code (RSQ 1941, c. 142) as amended.

Ontario

Administration.—Ontario Department of Transport, Toronto.

Legislation.—The Highway Traffic Act (RSO 1960, c. 172), the Public Vehicles Act (RSO 1960, c. 337) and the Public Commercial Vehicles Act (RSO 1960, c. 319).

Manitoba

Administration.—Minister of Public Utilities, Winnipeg.

Legislation.—The Highway Traffic Act (RSM 1954, c. 112) as amended.

Saskatchewan

Administration.—Treasury Department, Highway Traffic Board, Revenue Building, Regina.

Legislation.—The Vehicles Act, 1957.

Alberta

Administration and Legislation.—The Vehicles and Highway Traffic Act (RSA 1955, c. 356) and the Motor Vehicles Accident Indemnity Act (RSA 1955, c. 209) are administered by the Motor Vehicle Branch, Department of Highways, Edmonton. The Public Service Vehicles Act (RSA 1955, c. 265) and the Rules and Regulations are administered by virtue of authority vested in the Highway Traffic Board, Department of Highways, Edmonton.

British Columbia

Administration and Legislation.—Enforcement of the Motor Vehicle Act, the Commercial Transport Act and the Motor Carrier Act is vested in the Royal Canadian Mounted Police and the various municipal police forces. The Motor Carrier Act is administered by the Public Utilities Commission, the Motor Vehicle Act by the Superintendent of Motor Vehicles and the Commercial Transport Act by the Minister of Commercial Transport, Victoria, B.C.

Yukon Territory

Administration.—Commissioner of the Yukon Territory, Whitehorse, Y.T. Information regarding regulations may also be obtained from the Registrar of Motor Vehicles, Government of the Yukon Territory, Whitehorse, Y.T.

Legislation.—The Motor Vehicles Ordinance (Revised Ordinances 1958, c. 77) as amended.

Northwest Territories

Administration.—Commissioner of the Northwest Territories. Address communications to the Director, Northern Administration Branch, Department of Northern Affairs and National Resources, Ottawa.

Legislation.—The Revised Ordinances of the Northwest Territories (SC 1956, c. 72) as amended.

Section 2.—Highways and Roads

The populated sections of Canada are well supplied with highways and roads. Access to outlying settlements is provided to some extent by roads built by logging, pulp and paper, and mining companies, although these are not generally available for public travel. At the same time, great areas of Newfoundland, Quebec, Ontario, the Prairie Provinces, British Columbia and the Territories are very sparsely settled and are virtually without roads of any kind.

At the end of 1959, the milage of highways and rural roads in Canada was 423,035, an increase of 25,654 miles over the 397,381 miles reported for 1958. The main reason for this increase was the inclusion, in 1959 for the first time, of milages under the jurisdiction of rural municipalities and small urban municipalities of less than 1,000 population which had been classed previously as rural. The inclusion of these milages was discounted in some provinces where the provincial authority had been able, in previous years, to estimate milage under rural municipality control.

The total of 423,035 miles includes all roads under provincial jurisdiction, federal roads, and local roads under municipal jurisdiction other than the milages in metropolitan areas (see p. 151) and urban centres of more than 1,000 population. The latter are given separately under the heading "Urban Roads", p. 803.

1.—Road Milages classified by Type and by Province, 1958 and 1959

NOTE.—Urban streets are not included; see text above.

Year and Classification	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles
1958												
Surfaced.........	**3,609**	**2,474**	**9,795**	**13,168**	**39,187**	**67,283**	**16,038**	**32,178**	**41,817**	**20,200**^{r}	**1,737**	**247,486**^{r}
Concrete surface.	—	14	7	—	196	658	145	—	5	—	—	1,025
Bituminous surface..........	218	425	2,554	3,051	10,742	13,450	1,614	2,056	3,058	3,787	8	40,963
Gravel..........	3,391	2,035	7,234	10,117	28,249	53,175	14,279	30,122	38,754	16,413^{r}	1,729	205,498^{r}
Earth............	**3,000**	**725**	**5,543**	—	**11,331**	**4,733**	**5,000**	**88,820**	**22,260**	**8,225**	**258**	**149,895**
Totals, 1958..	**6,609**	**3,199**	**15,338**	**13,168**	**50,518**	**72,016**	**21,038**	**120,998**	**64,077**	**284,25**^{r}	**1,995**	**397,381**[1]^{r}

For footnote, see end of table.

1.—Road Milages classified by Type and by Province, 1958 and 1959—concluded

Year and Classification	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles
1959[2]												
Surfaced	**3,851**	**2,335**	**12,435**	**13,198**	**41,354**	**68,310**	**23,139**	**33,566**	**46,382**	**22,289**	**1,853**	**268,712**
Concrete surface	—	14	7	4	245	676	153	—	6	15	—	1,120
Bituminous surface	278	642	2,835	3,322	11,853	13,760	2,203	2,222	3,500	4,232	8	44,855
Gravel	3,573	1,679	9,593	9,872	29,256	53,874	20,783	31,344	42,876	18,042	1,845	222,737
Earth	**3,022**	**915**	**2,939**	—	**11,234**	**4,511**	**16,271**	**85,368**	**21,265**	**8,536**	**262**	**154,323**
Totals, 1959	**6,873**	**3,250**	**15,374**	**13,198**	**52,588**	**72,821**	**39,410**	**118,934**	**67,647**	**30,825**	**2,115**	**423,035**[1]

[1] Excludes milages of all roads on Indian reservations except those with bituminous surface. [2] Includes milages under jurisdiction of rural municipalities and small urban municipalities previously classed as rural.

Total expenditures on roads and highways reached a new high in the year ended Mar. 31, 1960, amounting to $829,117,828, 7.3 p.c. above the total for the previous fiscal year; construction expenditures increased by 8.7 p.c. but maintenance costs were 1.8 p.c. lower. Table 2 shows expenditure by province and federal-provincial-municipal distribution of such expenditure for the years ended Mar. 31, 1956-60.

2.—Construction, Maintenance and General Expenditure on Rural Roads, Bridges and Ferries, by Province, Years Ended Mar. 31, 1956-60

Item and Province or Territory	1956	1957	1958	1959	1960
	$	$	$	$	$
Construction	**294,436,957**[1]	**421,146,178**[1]	**497,668,898**	**535,577,276**	**581,952,166**
Newfoundland	8,990,495	6,675,115	6,063,686	15,422,240	16,706,494
Prince Edward Island	2,911,560	3,746,085	3,378,621	5,442,721	8,047,041
Nova Scotia	8,615,147	12,378,093	15,508,597	17,526,726	21,661,432
New Brunswick	11,042,564	14,994,989	17,313,315	23,200,007	24,634,111
Quebec	76,496,786	84,053,328	94,082,542	121,934,188	117,985,056
Ontario	85,171,965	115,855,688	156,094,352	172,480,378	181,722,245
Manitoba	12,474,617	18,902,472	21,500,959	25,676,864	35,198,111
Saskatchewan	12,682,869	23,611,136	17,497,330	32,177,138	30,165,755
Alberta	39,800,420	50,630,485	52,984,501	46,868,117	48,912,150
British Columbia	33,283,542	83,598,882	109,098,346	67,897,619	87,628,210
Yukon and N.W.T.	1,850,116	3,999,750	4,146,649	6,951,278	9,291,561
Maintenance	**187,448,444**	**189,877,569**	**178,126,885**	**209,903,710**	**206,210,266**
Newfoundland	2,932,427	2,854,937	4,115,203	5,921,000	6,880,880
Prince Edward Island	1,588,903	1,257,941	1,345,050	1,634,229	1,791,333
Nova Scotia	11,580,407	13,845,101	11,386,596	12,397,624	11,767,809
New Brunswick	10,855,460	11,123,134	11,282,258	15,798,897	12,794,785
Quebec	35,418,194	41,685,630	43,070,708	53,400,913	53,278,310
Ontario	60,591,398	57,649,342	58,158,169	60,143,039	60,787,841
Manitoba	3,642,016	4,162,996	4,319,627	4,791,324	7,377,652
Saskatchewan	17,159,558	14,429,203	6,613,988	11,708,143	11,396,645
Alberta	22,610,892	22,758,513	20,108,685	24,362,277	23,606,690
British Columbia	17,164,500	18,000,792	15,442,032	17,088,673	13,677,501
Yukon and N.W.T.	3,904,689	2,109,980	2,284,569	2,657,586	2,850,820

For footnote, see end of table, p. 800.

2.—Construction, Maintenance and General Expenditure on Rural Roads, Bridges and Ferries, by Province, Years Ended Mar. 31, 1956-60—concluded

Item and Province or Territory	1956	1957	1958	1959	1960
	$	$	$	$	$
Administration and General[2]	**31,966,869**	**40,775,633**	**19,910,434**	**24,176,849**	**40,955,396**
Newfoundland	397,452	429,140	120,369	781,277	629,851
Prince Edward Island	81,709	62,089	91,212	72,080	65,285
Nova Scotia	960,176	961,299	1,243,849	1,774,992	1,980,051
New Brunswick	498,305	567,377	937,314	1,134,982	1,193,613
Quebec	3,524,851	3,353,079	2,627,142	3,429,533	3,711,572
Ontario	21,135,457	28,657,745	5,866,078	7,347,486	21,849,315[3]
Manitoba	965,426	1,080,353	1,330,759	1,649,152	1,964,122
Saskatchewan	1,506,549	1,644,620	2,467,587	2,732,186	2,729,526
Alberta	786,560	490,493	1,246,725	905,963	1,138,560
British Columbia	1,608,382	2,865,362	3,161,716	3,692,097	5,005,731
Yukon and N.W.T.	39,402	496,076	582,683	415,001	483,770
Totals	**513,852,270**	**653,567,078**[4]	**714,726,805**[5]	**772,748,991**[6]	**829,117,828**
Distribution of All Expenditure—					
Federal	**36,644,143**	**59,887,876**	**80,731,880**	**98,199,342**	**106,085,451**
Provincial	**435,583,891**	**525,204,516**	**581,187,652**	**616,512,226**	**657,600,188**
Municipal	**40,213,328**	**48,948,407**	**51,278,877**	**55,372,603**	**63,546,824**
Other	**1,410,908**	**19,526,279**	**1,528,396**	**2,664,820**	**1,885,365**

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[1] Includes payments from railways and contributions from the Railway Grade Crossing Fund toward elimination of grade crossings, etc., amounting to $1,116,876 in 1955-56 and $2,700,155 in 1956-57. [2] Includes federal administrative costs *re* Trans-Canada Highway amounting to $462,600 in 1955-56, $168,000 in 1956-57, $235,000 in 1957-58, $242,100 in 1958-59 and $204,000 in 1959-60. [3] Includes $8,974,818 for property purchases. [4] Includes expenditures of $1,767,698 by municipalities in Manitoba for which no breakdown is available. [5] Includes expenditures of $2,573,262 by municipalities in Manitoba, of $14,932,793 by municipalities in Saskatchewan and of $1,514,533 by the British Columbia Department of Highways for which no breakdown is available. [6] Includes expenditures of $3,091,156 by municipalities in Manitoba for which no breakdown is available.

The Trans-Canada Highway.—The original federal-provincial agreement for construction of the Trans-Canada Highway is given in outline, together with other data on specifications and proposed route across the participating provinces, in the 1951 Year Book, pp. 631-634. Under the Act, which became effective Dec. 10, 1949, agreements covering the Federal Government's participation in the cost of construction were entered into with each of the provinces (except Quebec). The Act set the standards to be met—a hard-surfaced, two-lane highway, 22 to 24 feet wide with ample shoulder widths, bridge clearances and sight distances, low gradients and curvature, a maximum load capacity of nine tons for one axle, and the elimination, wherever possible, of railway grade crossings. The shortest practicable east-west route was to be designated by each province within its own borders, in agreement on terminal points with adjoining provinces. Those sections within the National Parks were to be the responsibility of the Federal Government. Federal contribution was to be 50 p.c. of the cost of new construction and up to 50 p.c. of the cost of construction of sections of highway built prior to the passing of the Act, where those sections were properly incorporated in the Trans-Canada Highway. Total Federal Government contribution under this Act was limited to $150,000,000.

An amendment to the Act in 1956 increased the extent of federal financial participation by providing for an additional 40 p.c. contribution on one-tenth of the highway milage in each province. The construction period was extended to Dec. 31, 1960 and the aggregate limit of federal funds available for the purpose was increased to $250,000,000. A second amendment passed in March 1959 added $100,000,000 to the federal contribution and a third amendment passed in June 1960 raised the total amount of funds available for federal expenditure under the Act and its amendments to $400,000,000. The 1960 amendment also extended for three years the period in which construction costs might be incurred under the Act.

On Oct. 27, 1960, an agreement was signed between the Federal and Quebec Governments; thus, all provinces are now participating in the Trans-Canada Highway.

Under present agreements, a paved highway is to be completed across Canada by May 31, 1964—a highway constructed in conformity with the general specifications laid down in the Act or paved to a satisfactory provincial standard. The latter concession was made to eliminate the need for reconstructing highways already paved in order to speed up the work on other sections. However, federal participation in the cost is limited to that portion constructed to Trans-Canada Highway standards.

In the ten provinces the routes, as amended in 1960, totalled 4,877 miles—in Newfoundland, 540 miles; Prince Edward Island, 71 miles; Nova Scotia, 318 miles; New Brunswick, 390 miles; Quebec, 400 miles; Ontario, 1,453 miles; Manitoba, 309 miles; Saskatchewan, 406 miles; Alberta, 282 miles; British Columbia, 568 miles; and in the National Parks, 140 miles. Later revisions in location have made some minor alterations. For instance, the milage through Mount Revelstoke and Glacier National Parks in British Columbia was shortened by a change of route, as was the milage in Newfoundland when the Highway was routed through Terra Nova National Park. The Federal Government allocated the sum of $9,581,000 for construction of the Highway through the National Parks during the year ended Mar. 31, 1960.

Contractual commitments for new construction on the Highway up to January 1961 amounted to $615,565,310, of which the federal share, including the additional 40 p.c. under the amended Act, was $365,762,241. Federal payments to the provinces during this period for prior, interim and new construction totalled $291,363,702. On-site labour expended on the Highway up to Mar. 31, 1960 was 9,507,375 eight-hour man-days of employment; off-site employment required for the provision of necessary material and services was estimated at 16,162,538 man-days.

In Saskatchewan, work was completed over the whole route of 406 miles in 1957 and the Highway was officially opened and dedicated on Aug. 21 of that year. In provinces more handicapped by problems of terrain and construction, progress was reported. At Dec. 31, 1960, contracts for 3,396 miles of grading had been approved and the equivalent of 3,221 miles built; paving to specified standards had been completed over a distance of 2,896 miles; and 495 bridges, overpasses and other structures of more than 20-foot span had been approved for construction.

Roads to Resources and Roads in the North.*—The Federal Government's Roads-to-Resources program entered its fourth year in 1961 with construction proceeding at a good pace in all ten provinces. As the year opened, more than $45,000,000 worth of work had been carried out since 1958 and contracts exceeding $84,000,000 had been approved. Federal payments to the provinces amounted to more than $20,000,000—or close to one-half the cost of work completed.

Expenditures for the year ended Mar. 31, 1962 cannot be forecast in detail. Ten separate road programs are being carried on and many factors—weather particularly—affect the progress of construction. But, based on data supplied by the provinces, plans for 1961-62 call for a combined expenditure of $22,500,000. Under the terms of the Roads-to-Resources agreements, the Federal Government will reimburse the provinces for half this amount.

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* Prepared in the Editorial and Information Division, Department of Northern Affairs and National Resources, Ottawa.

When the program is completed it will represent a joint investment of at least $150,000,000. Most provinces, however, are carrying out work in excess of $15,000,000 so that direct expenditures may reach a national total of $175,000,000. This will not affect the federal contribution, however, which remains at $7,500,000 to each province. The current milage—4,504—will be increased when Quebec, Ontario and Newfoundland have fully developed their programs.

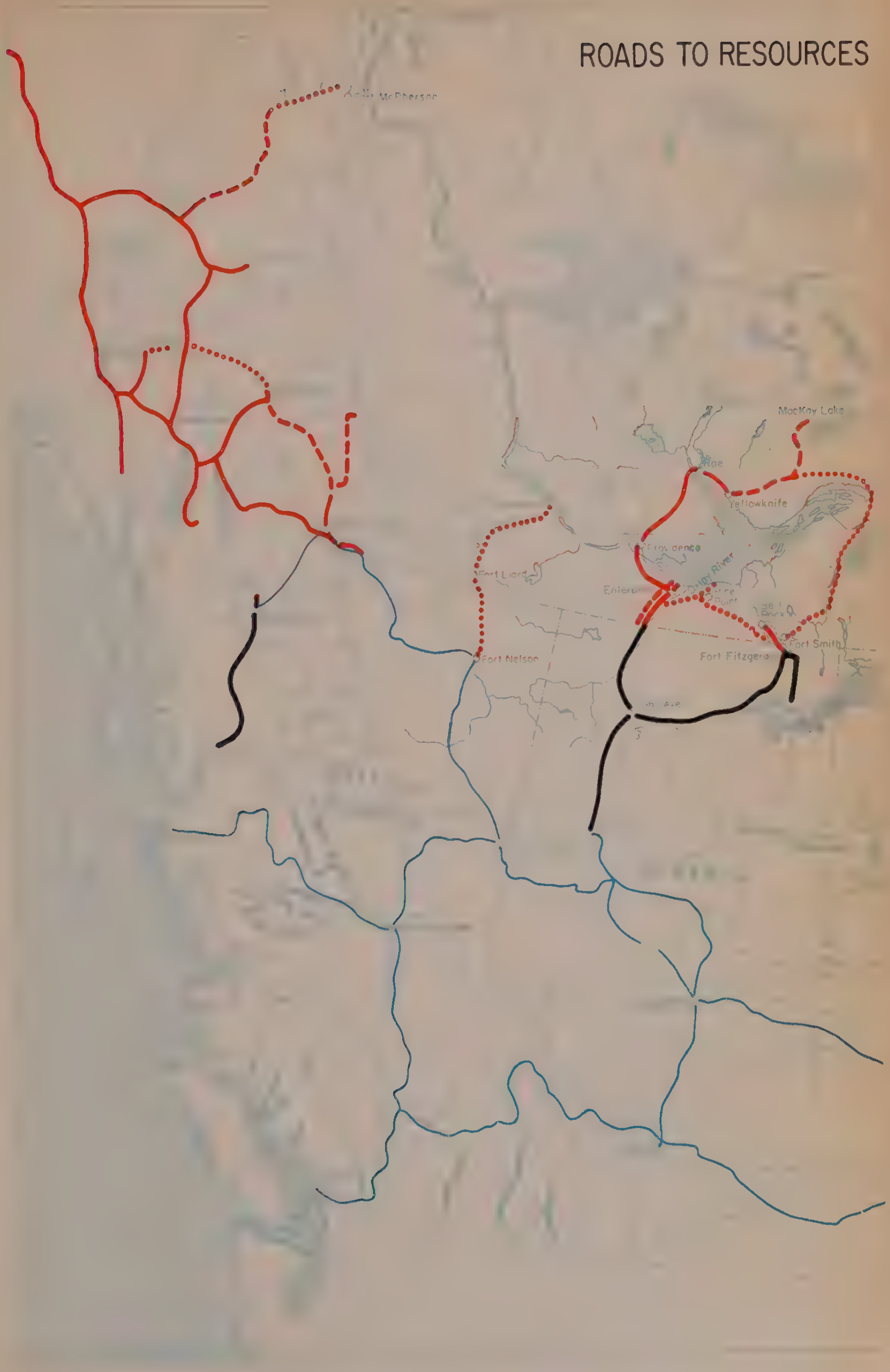
The Roads-to-Resources program is made up of at least 100 separate projects. While it is not possible to measure the impact of these access avenues on regional economies, the scope of the program and the nature of the work represent thousands of man-hours of employment—work, moreover, spread from coast to coast and throughout many levels of skill and labour. In any province the program may consist of as many projects as can qualify for inclusion and for which there are sufficient funds available. For example, in British Columbia the Roads-to-Resources program is concentrating on a single road, while in New Brunswick it is spread over some 17 separate projects. Except in Nova Scotia and Prince Edward Island where the programs are being devoted to tourist development roads, surfaces will be built of rock or gravel. Road and bridge specifications vary between provinces and within a province, depending on location and type of traffic to be carried. A common characteristic, however, is the effect each will have in increasing productiveness of important resources and in spear-heading exploration of promising areas.

Most of the major resource roads west of the Atlantic Provinces lie within the northern, less-developed half of the provinces. This northern characteristic offers practical aid to provincial initiative already looking beyond more settled regions for fresh sources of minerals, timber and fish, and new prospects for tourist development. Most of the more accessible resource areas of value have been appraised and brought into production and it is realized that exploration must broaden the traditional east-west approach and consider the economic prospects to the north.

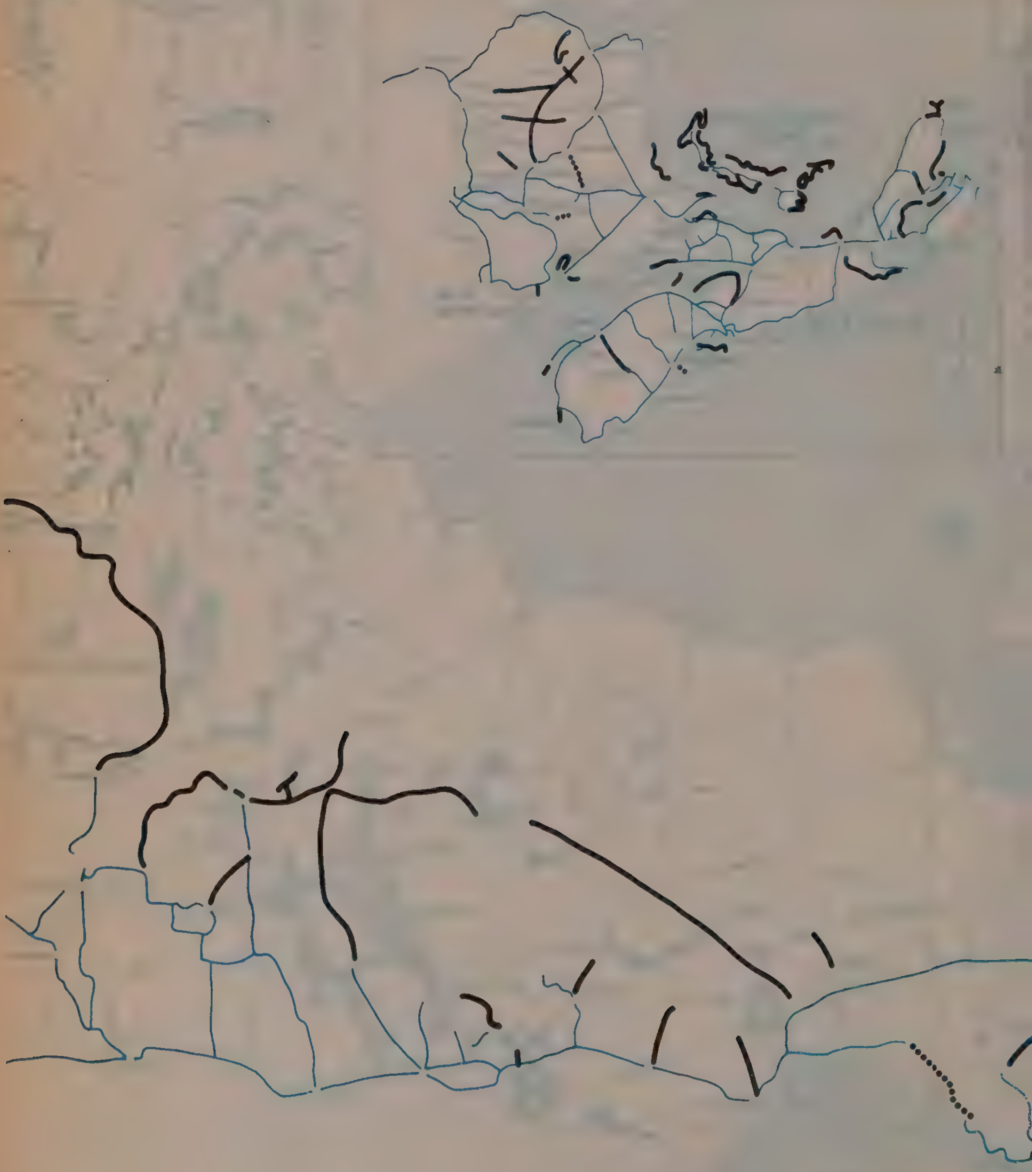
Some of the more important Roads-to-Resources routes in Western Canada will eventually link with the system of roads that the Federal Government is building in the Yukon and Northwest Territories; one link has already been achieved by the Mackenzie Highway. The two types of road system are, however, quite distinct. In the Roads-to-Resources program the contribution of the Federal Government, through the Department of Northern Affairs and National Resources, is financial; in the Roads-in-the-North program it includes responsibility for building and maintenance. The Territorial Governments contribute to the construction of certain types of resource roads and maintenance of all resource roads is shared by the Federal and Territorial Governments on an 85-15 p.c. basis.

In September 1960, the first of the new Territorial roads was officially opened—the Great Slave Highway connecting Yellowknife, the largest town in the Territories, with the highway systems of southern Canada. The first passenger bus to make the direct run from Edmonton reached Yellowknife on Jan. 18, 1961. The first 20 miles of an extension to this road from Yellowknife to McKay Lake will be started in 1961. However, the largest single project currently under way in the Northwest Territories is the reconstruction of the Mackenzie Highway, which includes the building of a major bridge near Hay River.

ROADS TO RESOURCES


Fort McPherson
MacKay Lake
Rae
Yellowknife
Providence
Hay River
Fort Liard
Enterprise
Pine Point
Fort Nelson
Fort Smith
Fort Fitzgerald

PROGRAM AND TERRITORIAL ROAD CONSTRUCTION, 1961



ROADS TO RESOURCES PROGRAM AND TERRITORIAL ROAD CONSTRUCTION

1961

A modern highway replaces the portage trail between Fort Fitzgerald and Fort Smith, N. W. T.

National Film Board

In the Yukon Territory, a $5,000,000 road-construction program, involving the building of five large bridges, will be started during 1961. Some 110 miles of road will be built as part of three projects—the Flat Creek–Eagle Plain road, the Watson Lake Road to Ross River, and the Nahanni Range Road. The largest of these is the Watson Lake–Ross River project. Expenditure during the year on new roads and improvement of existing roads will amount to about $3,500,000 and an estimated $100,000 will be spent on surveys for future development roads.

Urban Roads.—Information on urban roads is obtained from urban authorities in all centres with populations of over 1,000 and also centres with fewer than 1,000 population located within census metropolitan areas. Brief statistical data are given in Table **3**; more detail may be obtained from DBS annual report *Road and Street Mileage and Expenditure* (Catalogue No. 53-201).

3.—Statistics of Urban Roadways, 1956-59

Item		1956	1957	1958	1959
Authorities Reporting	No.	**799**	**806**	**826**	**968**
Total Expenditure Reported[1]	$	**129,748,486**	**147,470,296**	**164,310,110**	**191,949,837**
New construction	$	62,277,032	68,428,628	72,084,590	93,884,248
Reconstruction, repair, cleaning, sanding, snow removal, administration, etc.	$	67,471,454	79,041,668	92,225,520	98,065,589
Total Urban Milage	No.	**22,823**	**24,841**	**25,652**	**37,614**
Rigid pavement	"	6,049	5,239	5,659	6,072
Flexible pavement	"	5,507	8,121	8,504	13,173
Gravel and other surfaces	"	9,132	9,581	9,741	15,165
Earth	"	2,135	1,900	1,748	3,204

[1] Includes expenditures on sidewalks, footpaths, bridges and ferries.

Section 3.—Motor Vehicles

Registrations.—Motor vehicle registrations continue to increase year by year, a record of 5,017,686 being reached in 1959. Of that total, 3,812,422 were for passenger cars—one for every 4.5 persons. Registrations by province are given in Table **4** and types of vehicles registered by province in Table **5**.

4.—Motor Vehicles Registered, by Province, 1950-59

NOTE.—Registrations given here include passenger cars, trucks, buses, motorcycles, service cars, etc., but not trailers or dealer licences. Figures for 1904-49 are given in the corresponding table of previous Year Books beginning with the 1937 edition.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total[1]
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1950	16,375	15,383	94,743	74,415	433,701	1,104,080	157,788	199,866	230,624	270,312	2,600,511
1951	20,058	16,896	105,262	83,023	500,729	1,205,098	171,265	215,450	259,841	291,417	2,872,420
1952	23,630	18,717	114,982	89,839	574,974	1,291,753	187,881	237,014	291,469	321,482	3,155,824
1953	29,576	20,286	129,564	93,914	617,855	1,406,119	203,652	257,504	318,812	348,830	3,430,672
1954	34,423	20,848	133,087	99,058	674,114	1,489,980	210,471	267,373	338,541	371,711	3,644,589
1955	39,766	22,145	149,841	106,648	743,682	1,617,853	222,474	274,950	356,839	409,343	3,948,652
1956	45,997	23,373	157,544	111,315	844,827	1,710,240	240,008	291,265	381,153	454,217	4,265,437
1957	47,982	23,725	164,286	116,712	901,065	1,793,499	246,188	300,326	405,229	491,884	4,497,091
1958	51,575	25,504	164,954	121,715	968,058	1,868,922	256,064	314,423	430,081	515,244	4,723,825
1959	51,145	27,502	189,435	129,629	1,040,366	1,973,737	269,974	326,690	456,458	545,491	5,017,686

[1] Includes registrations in the Yukon and Northwest Territories.

5.—Types of Motor Vehicles Registered, by Province, 1958 and 1959

Year and Province or Territory	Passenger Cars[1]	Commercial Cars, Trucks, etc.[2]	Buses	Motor-cycles	Total
	No.	No.	No.	No.	No.
1958					
Newfoundland	37,014	14,119	162	280	51,575
Prince Edward Island	15,860	9,519	8	117	25,504
Nova Scotia	119,569	43,637	745	1,003	164,954
New Brunswick	91,428	28,900	494	893	121,715
Quebec	734,403	215,908	4,854	12,893	968,058
Ontario	1,492,039	361,891	4,844	10,148	1,868,922
Manitoba	190,964	63,400	201	1,499	256,064
Saskatchewan	199,495	113,685	527	716	314,423
Alberta	294,910	129,604	3,293	2,274	430,081
British Columbia	393,337	117,866[r]	[3]	4,041	515,244[r]
Yukon and N.W.T.	3,944	3,279	53	9	7,285
Canada, 1958	**3,572,963**	**1,101,808[r]**	**15,181**	**33,873**	**4,723,825[r]**
1959					
Newfoundland	38,189	12,956	..	..	51,145
Prince Edward Island	17,408	9,965	10	119	27,502
Nova Scotia	140,196	47,418	819	1,002	189,435
New Brunswick	98,523	29,691	536	879	129,629
Quebec	798,935	223,139	5,464	12,828	1,040,366
Ontario	1,573,365	385,088	5,198	10,086	1,973,737
Manitoba	199,467	68,779	192	1,536	269,974
Saskatchewan	207,612	117,650	661	767	326,690
Alberta	315,057	135,229	3,367	2,805	456,458
British Columbia	419,422	121,941	[3]	4,128	545,491
Yukon and N.W.T.	4,248	2,961	33	17	7,259
Canada, 1959	**3,812,422**	**1,154,817**	**16,280**	**34,167**	**5,017,686**

[1] Includes taxis.   [2] Includes service cars, road tractors, etc.   [3] Included with trucks.

Apparent Supply of Automobiles.—The apparent supply of automobiles in Canada in any year is computed by deducting the number exported from the sum of the production and imports. Statistics regarding retail sales and the financing of motor vehicle sales are given in Chapter XIX on Domestic Trade and Prices.

6.—Apparent Supply of New Automobiles, 1950-59

Year	Cars Made for Sale in Canada[1]		Car Imports		Re-exports of Imported Cars		Apparent Supply	
	Passenger	Commercial[2]	Passenger	Commercial	Passenger	Commercial	Passenger	Commercial[2]
	No.	No.	No.	No.	No.	No.	No.	No.
1950	259,481	96,826	81,722	6,806	62	20	341,141	103,612
1951	243,155	105,547	42,631	5,703	2,866	11	282,920	111,239
1952	245,443	112,485	35,665	4,328	999	11	280,109	116,802
1953	319,937	100,772	53,179	5,296	44	3	373,072	106,065
1954	267,452	59,666	38,509	4,973	84	25	305,877	64,614
1955	349,306	69,186	48,546	9,403	22	24	397,830	78,565
1956	349,809	85,094	76,200	13,032	45	42	425,964	98,084
1957	318,416	64,857	70,796	9,215	65	39	389,147	74,033
1958	280,677	55,908	104,195	9,182	190	8	384,682	65,082
1959	285,841	63,429	153,932	11,632	549	6	439,224	75,055

[1] Factory shipments since 1952.   [2] Includes Armed Forces vehicles.

Provincial Government Revenue from Motor Vehicles.—The taxation of motive fuels, motor vehicles, garages, drivers, chauffeurs, etc., is an important source of provincial government income. In every province licences or permits duly issued by the provincial authorities are required for motor vehicles of all kinds, trailers, operators or drivers, paid chauffeurs, dealers, garages and gasoline and service stations. In 1959 the average cost per motor vehicle for operating taxes and licences was about $108. Motive fuel tax rates in the different provinces and territories in 1960 were as follows:—

Province or Territory	*Gasoline*	*Diesel Fuel*	*Liquefied Petroleum Gas*
	cts.	cts.	cts.
Newfoundland	19	19	—
Prince Edward Island	16	16	—
Nova Scotia	17	17	17
New Brunswick	15	15	15
Quebec	13	13	13
Ontario	13	18½	18½
Manitoba	11	11	11
Saskatchewan	12	12	12
Alberta	10	12	10
British Columbia	10	12	12
Yukon Territory	6	6	6
Northwest Territories	1½	1½	1½

The more important sources from which provincial revenue from motor vehicles is derived are shown in Table 7. Federal Government revenue from import duties, excise and sales taxes are given in Chapter XXI on Public Finance.

7.—Provincial Revenue from the Registration and Operation of Motor Vehicles, by Province, Years Ended Mar. 31, 1959 and 1960

Year and Province or Territory	Passenger Automobile Licences	Truck, Bus, Trailer and other Vehicle Licences	Motorcycle Licences	Chauffeur, Driver and Dealer Licences	Public Service Vehicle Tax	Motive Fuel Taxes	Total[1]
	$	$	$	$	$	$	$
1959							
Newfoundland	641,366	677,990	2,320	187,430	611	4,651,523	6,338,562
Prince Edward Island	273,249	303,157	432	65,593	3,725	2,186,929	2,841,355
Nova Scotia	2,344,429	2,109,328	[2]	358,974	31,599	14,526,162	19,657,907
New Brunswick	1,857,281	1,930,859	5,036	313,715	47,665	11,445,325	15,802,440
Quebec	16,795,898	14,418,034	51,572	2,997,110	1,003,107	88,787,601	125,274,866
Ontario	23,819,556	25,828,789	47,192	2,798,150	2,827,040	151,389,717	209,342,718
Manitoba	3,033,943	1,428,391	6,581	133,889	1,275,471	14,162,444	20,219,180
Saskatchewan	2,917,260	3,284,705	[3]	401,272	—	19,924,190	27,300,213
Alberta	4,384,745	6,252,577	[4]	279,978	206,098	24,468,867	36,399,921
British Columbia	7,890,246	4,544,716	18,214	572,515	562,453	26,602,573	40,872,215
Yukon and N.W.T.[r]	47,294	52,678	25	19,902	14,412	209,094	353,764
Totals, 1959[r]	**64,005,267**	**60,831,224**	**131,372**	**8,128,528**	**5,972,181**	**358,354,425**	**504,403,141**
1960							
Newfoundland	707,609	767,568	2,062	194,541	496	5,048,813[5]	6,918,333
Prince Edward Island	300,373	357,005	436	68,653	3,395	2,885,184	3,623,872
Nova Scotia	2,593,176	2,229,270	[2]	383,034	90,620	15,350,353	20,977,858
New Brunswick	1,998,431	1,999,497	4,865	326,809	32,739	12,011,748	16,590,945
Quebec	18,192,518	15,407,648	51,312	3,120,615	1,100,594	93,619,243	132,686,692
Ontario	27,848,971	29,928,855	56,794	2,985,339	3,416,077	158,446,490	225,505,015
Manitoba	3,294,013	2,834,331	6,480	803,862	55,701	15,174,459	22,663,553
Saskatchewan	3,105,493	3,500,797	[3]	432,793	—	20,633,494	28,487,848
Alberta	4,681,784	6,675,980	[4]	244,849	146,935	24,960,299	37,704,606
British Columbia	8,400,571	4,978,540	18,510	578,319	601,646	28,351,287	43,211,182
Yukon and N.W.T.	49,182	67,334	44	21,960	34,744	247,025	433,046
Totals, 1960	**71,172,121**	**68,746,825**	**140,503**	**9,160,774**	**5,482,947**	**376,728,495**	**538,802,950**

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[1] Includes other items not shown such as transfer of motor vehicles, garage and service station licences, and fines for infractions of motor vehicle laws. [2] Included with other motor vehicles. [3] Included with miscellaneous revenues and therefore in total. [4] Included with passenger automobiles. [5] Includes commissions allowed to gasoline agents and refunds.

Sales of Motive Fuels.—It is the intention here to provide estimates of the total amount of motive fuel used by motor vehicles on Canadian public roads only. As the information is not available precisely in accordance with the concept, it has been necessary to approach the objective by the process of eliminating the amount of motive fuel used for other purposes. From the total gross sales, the following are subtracted to obtain sales on which the full rate of tax is paid: tax exempt sales to the Federal Government and other consumers, exports, and sales on which refunds are paid. The resulting data, which are net sales, are considered to be equivalent to the actual amount of motive fuel used on Canadian public highways. Although there is included in net sales an undetermined amount of motive fuel which is taxable but not used on the public highways, including in some provinces aviation gasoline, turbo fuel and motive fuels consumed by power boats, the total effect of this is considered to be insignificant.

Data for gasoline and diesel oil are shown separately in Table 8. Liquefied petroleum gases are included with gasoline. The consumption of taxable gasoline, which is used almost entirely for automotive purposes, rose 4.9 p.c. to 2,865,000,000 gal. in 1959. Net sales of diesel oil in 1959 increased by 25.8 p.c. to 120,000,000 gal.

8.—Sales of Motive Fuels, by Province, 1955-59

Province or Territory	1955[1]	1956[1]	1957	1958	1959
	GASOLINE AND LIQUEFIED PETROLEUM GASES				
	gal.	gal.	gal.	gal.	gal.
Newfoundland	21,534,679	24,242,239	25,526,674	28,026,795	30,443,029
Prince Edward Island	13,751,121	14,325,068	14,293,703	16,152,969	17,854,271
Nova Scotia	86,499,272	91,133,927	94,852,532	99,662,302	104,250,854
New Brunswick	75,076,615	81,177,965	83,717,829	95,159,403	101,261,096
Quebec	545,070,050	611,828,946	660,810,503	721,348,397	755,247,641
Ontario	1,099,962,376	1,198,568,793	1,237,723,059	1,295,797,122	1,340,853,693
Manitoba	188,284,222	200,314,027	219,559,349	225,700,542	225,912,673
Saskatchewan	262,201,711	269,661,903	280,457,734	286,607,918	283,963,876
Alberta	353,924,513	383,609,186	402,560,725	442,191,585	474,001,753
British Columbia	256,166,048	298,957,204	324,972,114	325,269,939	345,370,730
Yukon and N.W.T.	—	4,245,811[2]	4,734,949[2]	8,939,770	11,518,629
Totals, Gross Sales	**2,902,470,607**	**3,178,065,069**	**3,349,209,171**	**3,544,856,742**	**3,690,678,245**
Refunds and exemptions	675,490,362	721,076,713	723,118,141	812,898,257	826,000,245
Totals, Net Sales	**2,226,980,245**	**2,456,988,356**	**2,626,091,030**	**2,731,958,485**	**2,864,678,000**
	DIESEL OIL				
	gal.	gal.	gal.	gal.	gal.
Totals, Net Sales	**50,667,242**	**70,779,820**	**92,832,457**	**95,479,919**	**120,129,508**

[1] Includes exports. [2] Yukon only.

Motor Carriers—Freight.*—Statistics of the common carrier segment of the inter-city and rural motor carrier industry have been collected since 1941. However, as little capital is required to enter the trucking business, many marginal operators are associated with the industry and the large turnover and numerous changes each year have created many problems in the collection of statistics; these are gradually being overcome. Statistics of contract carriers were collected for the first time in 1958. The 3,565 common carrier firms from which usable returns were secured in 1959 reported gross operating revenues of $349,037,573 compared with 3,510 firms reporting $292,719,406 in 1958. Usable returns for contract carriers reported a gross operating revenue of $72,379,453 in 1959.

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* Statistics are given in more detail in DBS annual report *Motor Carriers—Freight* (Catalogue No. 53-205).

Both groups of the motor carrier freight industry are divided into four classes based on gross annual revenue. Operators of vehicle fleets owned and operated by private companies, where the vehicles are not available for public service, such as dairies, bakeries, department and grocery stores, oil and gasoline distributors and breweries, are excluded.

9.—Summary Statistics of Motor Carriers—Freight, 1958 and 1959

Item		Common		Contract	
		1958	1959	1958	1959
Carriers Reporting	No.	**3,510**	**3,565**	**1,189**	**1,428**
Investments—Land, Buildings, Equipment, etc.	$	**199,403,189**	**242,821,925**	**42,801,909**	**55,872,416**
Operating Revenue	$	**292,719,406**	**349,037,573**	**59,361,113**	**72,379,453**
Freight—					
Intercity and rural	$	280,101,660	330,421,006	55,220,812	67,526,303
City	$	5,103,774	8,268,280	1,942,047	2,603,850
Other	$	7,513,972	10,348,287	2,198,254	2,249,300
Operating Expenditure	$	**274,447,130**	**321,448,013**	**54,229,139**	**65,671,286**
Maintenance	$	39,654,694	46,101,792	9,341,583	11,167,255
Wages and bonuses of drivers and helpers	$	63,058,397	71,499,194	12,266,936	15,655,190
Other transportation expenditure	$	104,606,099[1]	126,656,410[1]	22,577,355[1]	27,732,470[1]
Operating taxes and licences	$	9,103,417	10,358,482	1,790,172	2,257,633
Other operating expenditure	$	58,024,523	66,832,135	8,253,093	8,858,738
Net Operating Revenue	$	**18,272,276**	**27,589,560**	**5,131,974**	**6,708,167**
Traffic and Employees—					
Fuel Consumed—					
Gasoline	gal.	76,853,000	82,145,000	19,219,000	23,441,000
Diesel oil	"	16,995,000	20,337,000	1,906,000	3,029,000
Liquefied petroleum gases	"	19,000	37,000	19,000	113,000
Working proprietors	No.	3,290	3,040	1,081	1,174
Allowances of working proprietors	$	7,561,587	8,562,946	3,217,342	3,971,586
Employees—					
Average employed during year	No.	26,210	30,254	4,634	5,576
Total salaries and wages	$	103,950,714	121,676,514	17,754,268	21,851,641
Equipment—					
Trucks	No.	11,756	11,708	3,140	3,828
Road tractors	"	8,580	9,485	1,816	1,950
Semi-trailers	"	12,708	14,065	2,071	2,363
Trailers	"	567	788	184	235
Trucks with diesel engines	"	225	183	75	81
Road tractors with diesel engines	"	1,834	1,975	228	323

[1] Includes fuel taxes and rents.

10.—Statistics of Motor Carriers—Freight, classified by Type and Revenue Group, 1959

Item		Carriers with Annual Gross Revenue of—			
		Over $500,000	$100,000 to $499,999	$20,000 to $99,999	$19,999 or Under
Common Carriers					
Carriers Reporting	No.	**135**	**255**	**638**	**2,537**
Cost of Land, Buildings, Equipment, etc.	$	**167,080,385**	**37,232,663**	**21,857,067**	**16,651,810**
Operating Revenue	$	**246,899,637**	**53,645,023**	**29,729,961**	**18,762,952**
Freight	$	240,230,685	51,080,521	28,856,392	18,521,688
Other	$	6,668,952	2,564,502	873,569	241,264
Operating Expenditure	$	**231,988,560**	**50,004,183**	**26,026,523**	**13,428,747**
et Operating Revenue	$	**14,911,077**	**3,640,840**	**3,703,438**	**5,334,205**

10.—Statistics of Motor Carriers—Freight, classified by Type and Revenue Group, 1959 —concluded

Item		Carriers with Annual Gross Revenue of—			
		Over $500,000	$100,000 to $499,999	$20,000 to $99,999	$19,999 or Under
Common Carriers—concluded					
Fuel and Employees—					
Fuel Consumed—					
Gasoline	gal.	47,946,000	14,864,000	10,500,000	8,835,000
Diesel oil	"	17,172,000	2,229,000	681,000	255,000
Liquefied petroleum gases	"	37,000	—	—	—
Working proprietors	No.	—	64	584	2,392
Allowances of working proprietors	$	—	425,152	2,922,557	5,215,237
Contract Carriers					
Carriers Reporting	No.	**19**	**119**	**400**	**890**
Cost of Land, Buildings, Equipment, etc.	$	**16,776,542**	**18,456,655**	**14,556,786**	**6,082,437**
Operating Revenue	$	**21,154,101**	**25,210,571**	**17,914,020**	**8,100,761**
Freight	$	20,645,705	23,845,568	17,593,689	8,045,191
Other	$	508,396	1,365,003	320,331	55,570
Operating Expenditure	$	**20,614,820**	**23,623,316**	**15,532,822**	**5,900,328**
Net Operating Revenue	$	**539,281**	**1,587,255**	**2,381,198**	**2,200,433**
Fuel and Employees—					
Fuel Consumed—					
Gasoline	gal.	6,007,000	7,310,000	6,577,000	3,547,000
Diesel oil	"	534,000	1,909,000	563,000	23,000
Liquefied petroleum gases	"	—	—	23,000	90,000
Working proprietors	No.	—	16	333	825
Allowances of working proprietors	$	—	104,097	1,817,279	2,050,210

Passenger Buses.*—The operations of motor carrier companies predominantly engaged in passenger bus service are summarized in Tables 11 and 12. Data refer to the for-hire segment of the industry and only those firms engaged in intercity and rural operations and having an annual gross revenue exceeding $6,000 are covered. Operators predominantly involved in the provision of charter or school bus service are not included.

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* Statistics are given in more detail in DBS monthly and annual reports *Passenger Bus Statistics* (Catalogue Nos. 53-215 and 53-216).

11.—Summary Statistics of Intercity and Rural Passenger Bus Companies, 1956-59

NOTE.—Only carriers with an annual gross revenue of over $6,000 are included.

Item		1956	1957	1958	1959
Carriers Reporting	No.	**119**	**136**	**154**	**162**
Cost of Land, Buildings, Equipment, etc.	$	**57,081,464**	**57,834,081**	**59,213,624**	**66,083,872**
Revenue	$	**47,714,152**	**47,250,757**	**46,787,640**	**49,131,642**
Regular Passenger Service—					
Intercity and rural	$	39,948,106	39,277,877	37,930,050	40,275,902
City	$	1,269,769	1,285,710	1,771,348	983,739
Chartered passenger service	$	3,077.207	3,219,334	3,641,525	3,966,249
Other motor carrier	$	3,419,070	3,467,836	3,444,717	3,905,752
Operating Expenditure	$	**43,879,782**	**43,404,424**	**43,005,593**	**44,945,424**
Maintenance	$	11,311,170	10,078,321	9,172,354	8,979,538
Wages and bonuses of drivers and helpers	$	9,829,337	9,808,732	10,470,104	11,246,010
Other transportation expenditure	$	10,591,089	10,867,088	10,213,088	10,634,177
Operating taxes and licences	$	3,737,614	3,571,718	3,569,911	3,934,147
Other operating expenditure	$	8,410,572	9,078,565	9,580,136	10,151,552

11.—Summary Statistics of Intercity and Rural Passenger Bus Companies, 1956-59 —concluded

Item		1956	1957	1958	1959
Net Operating Revenue	$	**3,834,370**	**3,846,333**	**3,782,047**	**4,186,218**
Traffic and Employees—					
Passengers—					
Regular Routes—					
Intercity and rural	No.	65,261,484	54,447,010	51,578,248	53,807,135
City	"	9,112,942	13,304,475	12,581,592	6,910,905
Special and chartered service	"	2,789,702	2,650,478	4,696,157	4,788,193
Bus Miles—					
Regular Routes—					
Intercity and rural	No.	90,825,349	83,898,345	83,319,763	86,694,483
City	"	2,998,468	3,787,702	4,219,187	2,405,350
Special and chartered service	"	5,964,287	5,702,492	6,066,251	6,297,288
Gasoline consumed	gal.	10,017,975	8,578,183	6,903,530	7,039,500
Diesel oil consumed	"	5,025,200	5,626,623	7,012,014	6,881,396
Working proprietors	No.	82	66	55	66
Allowances of working proprietors	$	194,731	184,065	187,797	215,256
Employees—					
Average employed during year	No.	5,481	5,326	5,156	5,062
Total salaries and wages	$	19,141,672	19,355,124	20,333,995	21,329,084
Equipment—					
Buses	No.	2,198	2,115	2,300	2.367
Gasoline	"	*1,561*	*1,350*	*1,432*	*1,389*
Diesel	"	*637*	*765*	*868*	*978*

12.—Statistics of Intercity and Rural Passenger Bus Companies, classified by Revenue Group, 1959

Item		Companies with Annual Gross Revenue of		
		$100,000 or More	$20,000 to $99,999	$6,000 to $19,999
Carriers Reporting	No.	**45**	**57**	**60**
Cost of Land, Buildings, Equipment, etc.	$	**62,060,970**	**3,271,835**	**751,067**
Revenue	$	**45,669,858**	**2,795,463**	**666,321**
Passenger	$	42,085,370	2,528,372	612,148
Other	$	3,584,488	267,091	54,173
Operating Expenditure	$	**41,756,892**	**2,598,028**	**590,504**
Net Operating Revenue	$	**3,912,966**	**197,435**	**75,817**
Traffic and Employees—				
Passengers	No.	57,996,758	6,253,697	1,255,778
Bus miles	"	86,608,507	6,147,924	2,640,690
Gasoline consumed	gal.	5,702,353	1,031,431	305,716
Diesel oil consumed	"	6,818,651	52,273	10,472
Working proprietors	No.	1	18	47
Allowances of working proprietors	$	5,200	102,924	107,132

Motor Transport Traffic.*—Surveys of motor transport traffic in all provinces were placed on a continuing basis in 1957. Approximately 3 p.c. of total registrations were sampled for surveys of truck operations during each quarter of 1958. Commencing with the second quarter of that year, each quarterly sample was spread over three survey weeks with one-third of the sample being used for a seven-day period (Sunday through Saturday) per month. Figures for 1959 were not available at the time of going to press.

Excluding vehicles that do not perform normal transportation services, such as cranes, tow trucks, road building equipment, etc., the average number of trucks licensed in Canada during the year 1958 was 862,775. Of these, 5.9 p.c. were for-hire carriers, 23.8 p.c. were private intercity trucks, 35.9 p.c. were private trucks operated predominantly within urban areas, and 34.4 p.c. were farm trucks. One-third of the total number were registered in Ontario and one-half were registered in the two provinces of Ontario and Quebec.

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* Statistics are given in more detail in DBS annual reports *Motor Transport Traffic Statistics* for Canada and the provinces (Catalogue Nos. 53-207—53-214).

13.—Average Truck Population, by Type of Operation and Province, 1958

Type of Operation	Atlantic Provinces	Quebec	Ontario	Manitoba	Saskat-chewan	Alberta	British Columbia	Canada
	No.	No.	No.	No.	No.	No.	No.	No.
For-hire	2,523	13,461	16,763	1,329	1,685	9,441	5,301	50,503
Private—								
Intercity	36,093	32,818	73,192	2,553	11,125	16,050	33,792	205,623
Urban	17,004	71,685	127,701	21,063	9,095	24,037	39,043	309,628
Farm	13,270	35,501	62,646	29,783	79,065	65,016	11,740	297,021
Totals	**68,890**	**153,465**	**280,302**	**54,728**	**100,970**	**114,544**	**89,876**	**862,775**

Canadian registered trucks travelled 6,616,000,000 miles in Canada during the year, of which milage 20 p.c. was accounted for by for-hire trucks, 33 p.c. by private intercity vehicles, 32 p.c. by urban trucks and 15 p.c. by farm trucks, the most numerous of all vehicles.

For-hire trucks averaged 184,700 net ton-miles per vehicle and, although amounting to only 5.9 p.c. of total registrations, they accounted for 60 p.c. of the total net ton-miles performed by all commercial trucks in Canada, a result of the comparatively high average yearly milage of for-hire trucks and also of the heavier average load carried (9.9 tons as compared with an average of 4.7 tons for all trucks). The predominance of heavier vehicles in the for-hire group also explains the low milage per gallon of gasoline of 6.3 as compared with an average of 9.7 for all vehicles.

14.—Summary Statistics of Truck Traffic, by Type of Operation, 1958

Item		For-Hire	Private			Total
			Intercity	Urban	Farm	
Miles per gallon of gasoline	No.	6.3	9.9	11.1	12.7	9.7
Average weight of goods carried	ton	9.9	4.3	1.5	1.5	4.7
Average net ton-miles per truck	No.	184,700	21,000	5,100	1,500	18,100
Capacity utilized	p.c.	53.0	41.3	31.9	24.1	45.0
Average gross ton-miles per truck	No.	371,500	57,100	21,700	9,100	46,300
Milage Travelled—	'000,000					
Newfoundland	miles	7	34	12	3	56
Prince Edward Island	"	2	13	4	12	31
Nova Scotia	"	16	130	47	27	220
New Brunswick	"	9	106	33	22	170
Quebec	"	292	466	540	136	1,434
Ontario	"	521	841	855	231	2,448
Manitoba	"	64	39	151	80	334
Saskatchewan	"	69	128	48	218	463
Alberta	"	231	175	157	234	797
British Columbia	"	88	274	244	57	663

Motor Vehicle Accidents.—Motorists are required by law to report accidents but complete statistics of these accidents are not available for all provinces. Statistics on all deaths from motor vehicle accidents are shown in Table **15.** A direct comparison of such statistics between the provinces is of little value because of differences in size, population, motor vehicle density, etc., but, to put them on somewhat the same basis, the average number of deaths per 10,000 registered motor vehicles has been tabulated. These data still give no weight to differences in use of motor vehicles, variations in climate, road conditions, tourist cars, etc., all of which are factors in accidents.

Data presented in Table **16** relate to traffic accidents only and consequently may not be compared with figures of Table **15** which include details of fatalities occurring elsewhere than on public streets or roads.

15.—Deaths Resulting from Motor Vehicle Traffic and Non-traffic Accidents, by Province, 1950-59

NOTE.—Figures for 1926-49 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
	DEATHS BY PLACE OF OCCURRENCE										
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1950	18	7	94	103	682	850	75	91	162	188	2,270
1951	26	20	103	122	818	991	102	93	184	227	2,686
1952	25	26	115	139	931	1,067	112	131	188	223	2,957
1953	28	14	133	124	959	1,119	111	153	261	219	3,121
1954	33	14	149	131	769	1,096	132	86	215	232	2,857
1955	47	18	121	147	894	1,177	104	133	203	235	3,079
1956	46	17	150	150	1,057	1,245	160	138	269	312	3,544
1957	39	14	141	162	1,179	1,341	151	155	253	259	3,694
1958	46	20	155	156	1,106	1,150	139	139	312	287	3,510
1959	45	33	123	125	1,167	1,241	153	167	269	314	3,637
	DEATHS PER 10,000 REGISTERED MOTOR VEHICLES										
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1950	10.99	4.55	9.92	13.84	15.73	7.70	4.75	4.55	7.02	6.95	8.74
1951	12.96	11.84	9.78	14.69	16.34	8.22	5.96	4.32	7.08	7.79	9.36
1952	10.58	13.89	10.00	15.47	16.19	8.26	5.96	5.53	6.45	6.94	9.37
1953	9.47	6.90	10.26	13.20	15.52	7.96	5.45	5.94	8.19	6.28	9.10
1954	9.59	6.71	11.19	13.22	11.41	7.35	6.27	3.22	6.35	6.24	7.84
1955	11.82	8.13	8.15	13.78	12.02	7.28	4.67	4.84	5.69	5.74	7.81
1956	10.00	7.27	9.52	13.48	12.51	7.28	6.67	4.74	7.06	6.87	8.32
1957	8.13	5.90	8.58	13.88	13.08	7.48	6.13	5.16	6.24	5.27	8.23
1958	8.92	7.84	9.40	12.82	11.42	6.15	5.43	4.42	7.25	5.62	7.45
1959	8.80	12.00	6.50	9.64	11.22	6.29	5.67	5.11	5.89	5.76	7.26

16.—Motor Vehicle Traffic Accidents, by Province, 1959

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Accidents Reported	**3,932**	**881**	**9,501**	**5,896**	**66,033**	**81,518**	**12,979**	**12,308**	**23,465**	**25,536**	**380**	**242,429**
Fatal—												
Resulting in death of one or more persons	33	24	112	98	742	1,006	127	137	208	268	8	2,763
Non-fatal—												
Resulting in injury to one or more persons	770	254	2,005	1,572	13,372	21,502	3,187	2,758	4,561	7,143	78	57,202
Resulting in property damage only	3,129	603	7,384	4,226	51,919	59,010	9,665	9,413	18,696	18,125	294	182,464
Persons Killed	**36**	**30**	**121**	**106**	**871**	**1,187**	**147**	**168**	**248**	**309**	8	**3,231**
Drivers	6	12	42	22	[1]	407	50	67	102	118	3	829[2]
Passengers	7	8	31	30	577	391	50	63	107	92	2	1,358
Pedestrians	18	9	44	47	294	322	39	26	32	84	3	918
Bicyclists	1	1	2	6	[1]	38	6	—	2	7	—	94[2]
Motorcyclists and passengers	—	—	—		[1]	21	2	—	2	6	—	
Others	4	—	2	1	[1]	8	—	12	3	2	—	32[2]

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[1] Included with passengers in Quebec

[2] Excludes Quebec; see footnote[1].

16.—Motor Vehicle Traffic Accidents, by Province, 1959—concluded

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Persons Injured	**970**	**389**	**2,798**	**2,335**	**19,852**	**31,602**	**4,657**	**4,497**	**6,993**	**10,541**	**117**	**84,751**
Drivers	182	133	885	752	[1]	11,137	1,661	1,704	3.201	3,522	44	23,221[2]
Passengers	305	189	1,138	11,029	15,028	13,614	2,073	2,356	2,705	5,184	58	43,679
Pedestrians	416	54	626	450	4,824	5,102	713	336	754	1,289	12	14,576
Bicyclists	29	5	99	88	[1]	1,155	154	72	74	358	2	2,906[2]
Motorcyclists and passengers	6	2	26		[1]	523	50	16	68	179	—	
Others	32	6	24	16	[1]	71	6	13	191	9	1	369[2]
Property Damage Caused[3] $'000	**1,489**	**369**	**3,753**	**2,563**	..	**38,222**	**4,955**	**5,248**	**9,635**	**12,227**	**245**	**78,706**[2]

[1] Included with passengers in Quebec. [2] Excludes Quebec; see footnote[1]. [3] All reported accidents are those resulting in property damage estimated at $100 or over.

PART IV.—WATER TRANSPORT*

The Canada Shipping Act.—Legislation regarding all phases of shipping is consolidated in the Canada Shipping Act (RSC 1952, c. 29). Under the Act and its amendments the Parliament of Canada accepts full responsibility for the regulation of Canadian shipping.

Section 1.—Shipping Facilities and Traffic

Subsection 1.—Shipping

All Canadian waterways including canals, lakes and rivers are open on equal terms, except in the case of the coasting trade, to the shipping of all countries of the world so that the commerce of Canada is not dependent entirely upon Canadian shipping. However, a large part of the inland and coastal traffic is carried in ships of Canadian registry.

In his major policy statement in the House of Commons on May 12, 1961, the Minister of Transport announced the decision of the Government to exclude the Great Lakes and St. Lawrence River system from some of the reciprocal provisions of the British Commonwealth Merchant Shipping Agreement.

Under the Agreement, all Commonwealth ships enjoy equal privileges with Canadian ships in the carriage of goods and passengers from one port in Canada to another port in Canada, commonly known as the coasting trade. Prior to the completion of the St. Lawrence Seaway most of the domestic Great Lakes traffic was moved in Canadian-registered ships and the rights of other Commonwealth ships in this trade were largely theoretical. After the Seaway was finished the intrusion of other Commonwealth ships, particularly United Kingdom ships, became a reality. The new policy gives legal recognition to a state of affairs that has prevailed in point of fact for many decades and restores the *status quo* as it existed before the advent of the Seaway.

When the statement of policy becomes translated into law, the exclusive right to carry goods and passengers between Canadian ports in the Great Lakes and the St. Lawrence River system from Havre St. Pierre westward will be restored to Canadian-registered ships.

Canadian Registry.—Under Part I of the Canada Shipping Act all ships in excess of 15 tons net register are required to be registered; ships of lower tonnage may be registered voluntarily, otherwise they are required to be operated under a Vessel Licence if powered by a motor of 10 hp. or more. Sect. 6 of the Act restricts ownership to British subjects or bodies corporate established under and subject to the laws of some part of Her Majesty's Dominions and having their principal place of business in those Dominions. Under the British Commonwealth Merchant Shipping Agreement all Commonwealth ships are given the general designation 'British Ship'; and a ship that should be but is not registered is not entitled to the privileges accorded to British ships. Ships in the planning stage or in course of construction may be recorded before registry by a Registrar of Shipping.

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* Information and statistics dealing with this subject have been supplied as follows: aids to navigation, canals, harbours, administrative services, and marine services by the Department of Transport and the National Harbours Board; the St. Lawrence Seaway by the St. Lawrence Seaway Authority; part of the financial statistics by the Department of Public Works; shipping subsidies by the Director of Subsidized Steamship Services, Canadian Maritime Commission; and canal traffic and statistics of shipping by the Public Finance and Transportation Division, Dominion Bureau of Statistics.

1.—Vessels on the Canadian Shipping Registry, by Province, as at Dec. 31, 1958-60

NOTE.—Figures for 1935-57 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

Province or Territory	1958		1959		1960	
	Ships	Gross Tonnage	Ships	Gross Tonnage	Ships	Gross Tonnage
	No.	No.	No.	No.	No.	No.
Newfoundland	834	72,754	797	69,699	797	70,452
Prince Edward Island	470	15,236	527	15.465	5,858	124,288
Nova Scotia	5,556	119,155	5,607	120,098	581	16,643
New Brunswick	1,323	56,449	1,650	65,139	1,853	65,467
Quebec	2,315	708,846	2,394	776,998	2,511	823,177
Ontario	2,257	818,299	2,296	814,653	2,336	859,955
Manitoba	109	14,114	104	13,662	107	14,491
Saskatchewan	—	—	—	—	—	—
Alberta	7	630	11[1]	531[1]	11	531
British Columbia	5,908	573,337	6,113	592,491	6,319	601,811
Yukon Territory	11	3,837	8	3,411	8	3,411
Northwest Territories	7	326	[2]	[2]	[2]	[2]
Totals	**18,797**	**2,382,983**	**19,507**	**2,472,147**	**20,381**	**2,580,226**

[1] Includes N.W.T.—see footnote 2.

[2] Aklavik, N.W.T., closed as a port of registry Dec. 12, 1958. Ships using the Mackenzie River system registered at Edmonton, Alta.

Shipping Traffic.—Before 1952 the only information available on shipping activity in Canada was the number and registered net tonnage of vessels operating in and out of Canadian customs ports and the tonnage of cargoes loaded and unloaded at these ports destined for or arriving from foreign countries. In 1952 the coastwise movement of cargo in and out of customs ports was reported for the first time and in January 1957 the coverage was extended to include tonnage of vessels and tons of cargo in and out of non-customs ports. Reports are not required for vessels of less than 15 registered net tons.

2.—Vessels Entered at Canadian Ports, 1950-59

NOTE.—Figures for 1929-49 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

Year	In Foreign Service[1]		In Coasting Service		Totals	
	Vessels	Net Tons Registered	Vessels	Net Tons Registered	Vessels	Net Tons Registered
	No.	No.	No.	No.	No.	No.
1950	31,420	42,816,949	84,065	56,066,997	115,485	98,883,946
1951	32,304	47,508,342	86,571	60,802,798	118,875	108,311,140
1952	33,782	52,156,098	79,722	56,776,504	113,504	108,932,602
1953	34,400	56,589,078	88,675	67,417,391	123,075	124,006,469
1954	34,079	54,767,687	84,890	64,291,085	118,969	119,058,772
1955	34,432	58,018,365	86,010	67,228,840	120,442	125,247,205
1956	35,315	63,105,100	88,640	75,220,366	123,955	138,325,466
1957 r	35,352	66,149,552	104,079	76,535,160	139,431	142,684,712
1958	30,710	57,738,034	100,234	76,197,625	130,944	133,935,659
1959	33,251	67,526,464	110,702	85,536,408	143,953	153,062,872

[1] Sea-going and inland international.

3.—Vessels Entered at each of the Principal Canadian Ports, 1959

Province and Port	In Foreign Service (Sea-going and Inland International)		In Coasting Service		Totals	
	Vessels	Net Tons Registered	Vessels	Net Tons Registered	Vessels	Net Tons Registered
	No.	No.	No.	No.	No.	No.
Newfoundland[1]	**2,048**	**2,326,135**	**17,198**	**9,173,525**	**19,246**	**11,499,660**
Bell Island	119	700,599	78	226,462	197	927,061
Botwood	63	208,207	161	70,390	224	278,597
Corner Brook	118	304,480	456	304,864	574	609,344
Port aux Basques	22	20,873	897	1,616,774	919	1,637,647
St. John's	824	765,976	789	452,335	1,613	1,218,311
Prince Edward Island[1]	**41**	**90,543**	**253**	**194,706**	**294**	**285,249**
Charlottetown	19	67,799	181	146,516	200	214,315
Nova Scotia[1]	**4,165**	**8,091,292**	**5,777**	**5,283,840**	**9,942**	**13,375,132**
Digby	41	6,128	359	677,257	400	683,385
Halifax	1,510	5,758,633	864	1,019,531	2,374	6,778,164
North Sydney	254	59,582	1,387	1,648,696	1,641	1,708,278
Sydney	144	226,797	731	1,287,444	875	1,514,241
Yarmouth	340	642,685	160	23,378	500	666,063
New Brunswick[1]	**3,228**	**1,938,601**	**2,964**	**1,560,603**	**6,192**	**3,499,204**
Dalhousie	39	92,516	20	43,279	59	135,795
Saint John	504	1,661,079	831	1,014,965	1,335	2,676,044
Quebec[1]	**5,426**	**20,301,659**	**23,971**	**19,470,159**	**29,397**	**39,771,818**
Montreal	2,923	9,259,887	3,856	4,804,596	6,779	14,064,483
Port Alfred	348	1,249,944	786	603,899	1,134	1,853,843
Quebec	810	3,610,249	1,865	2,591,943	2,675	6,202,192
Sept Îles	447	3,446,725	1,364	2,559,303	1,811	6,006,028
Trois Rivières	404	1,469,441	2,510	2,018,481	2,914	3,487,922
Ontario[1]	**8,382**	**16,468,087**	**12,510**	**19,961,820**	**20,892**	**36,429,907**
Amherstburg	573	340,572	83	21,384	656	361,956
Cornwall	29	45,346	159	75,866	188	121,212
Fort William	211	622,872	677	1,970,339	888	2,593,211
Hamilton	892	3,281,360	683	1,316,334	1,575	4,597,694
Kingston	108	181,122	601	841,264	709	1,022,386
Little Current	131	316,477	164	120,334	295	436,811
Michipicoten Harbour	83	368,830	74	274,891	157	643,721
Midland	29	59,799	235	684,120	264	743,919
Port Arthur	421	1,889,184	792	2,962,489	1,213	4,851,673
Port Colborne	252	582,030	508	1,303,869	760	1,885,899
Port Credit	44	99,540	175	191,613	219	291,153
Prescott	81	102,337	322	654,701	403	757,038
Sarnia	332	754,673	857	1,462,631	1,189	2,217,304
Sault Ste. Marie	504	2,003,719	464	1,054,933	968	3,058,652
Thorold	108	292,565	316	601,606	424	894,171
Toronto	1,241	2,520,741	1,151	1,573,850	2,392	4,094,591
Windsor	1,931	1,096,683	341	602,689	2,272	1,699,372
Manitoba (Churchill)	**60**	**254,638**	**17**	**22,959**	**77**	**277,597**
British Columbia and Northwest Territories[1]	**9,901**	**18,055,509**	**48,012**	**29,868,796**	**57,913**	**47,924,305**
Chemainus	136	371,227	872	565,879	1,008	937,106
Nanaimo	464	1,074,443	5,074	8,246,761	5,538	9,321,204
New Westminster	552	1,582,052	3,964	1,530,580	4,516	3,112,632
Ocean Falls	35	129,299	650	555,457	685	684,756
Port Alberni	215	836,325	537	248,814	752	1,085,139
Powell River	220	238,793	2,304	503,912	2,524	742,705
Prince Rupert	783	606,295	871	478,429	1,654	1,084,724
Vancouver	3,165	7,750,111	19,700	12,653,202	22,865	20,403,313
Victoria	1,731	2,727,752	3,017	1,915,847	4,748	4,643,599
Totals	**33,251**	**67,526,464**	**110,702**	**85,536,408**	**143,953**	**153,062,872**

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[1] Includes small ports not shown separately.

4.—Cargoes Loaded and Unloaded at Principal Canadian Ports from Vessels in International Seaborne and Coastwise Shipping, by Province, 1958 and 1959

Province and Port	1958			1959		
	Loaded	Unloaded	Total	Loaded	Unloaded	Total
	tons	tons	tons	tons	tons	tons
Newfoundland[1]	**4,132,919**	**2,424,118**	**6,557,037**	**4,489,106**	**2,602,247**	**7,091,353**
Bell Island	2,230,045	22,054	2,252,099	2,361,497	17,419	2,378,916
Botwood	359,404	126,438	485,842	326,876	132,913	459,789
Corner Brook	326,642	709,646	1,036,288	413,314	776,132	1,189,446
Port aux Basques	26,722	233,279	260,001	54,540	297,875	352,415
St. John's	103,132	554,263	657,395	108,509	659,725	768,234
Prince Edward Island[1]	**135,915**	**215,928**	**351,843**	**172,956**	**293,783**	**466,739**
Charlottetown	47,339	190,450	237,789	94,668	256,508	351,176
Nova Scotia[1]	**8,181,904**	**4,395,264**	**12,577,168**	**10,099,595**	**5,071,299**	**15,170,894**
Digby	39,373	48,175	87,548	33,002	46,301	79,303
Halifax	3,313,717	2,972,716	6,286,433	4,087,887	3,309,269	7,397,156
North Sydney	378,515	25,423	403,938	379,480	30,407	409,887
Sydney	2,071,909	1,124,099	3,196,008	1,812,607	1,412,084	3,224,691
Yarmouth	18,854	13,097	31,951	18,199	11,782	29,981
New Brunswick[1]	**1,693,093**	**1,551,032**	**3,244,125**	**1,634,583**	**1,815,161**	**3,449,744**
Dalhousie	202,678	14,834	217,512	156,932	15,051	171,983
Saint John	1,151,911	1,044,282	2,196,193	1,158,055	1,269,157	2,427,212
Quebec[1]	**24,709,238**	**21,692,820**	**46,402,058**	**30,982,469**	**22,705,911**	**53,688,380**
Montreal	7,854,372	9,895,336	17,749,708	7,605,087	10,336,477	17,941,564
Port Alfred	468,360	2,547,931	3,016,291	629,491	2,314,286	2,943,777
Quebec	1,076,743	2,920,118	3,996,861	1,043,505	3,225,770	4,269,275
Sept Îles	8,984,468	193,445	9,177,913	14,627,969	401,752	15,029,721
Trois Rivières	767,931	1,935,028	2,702,959	740,371	2,031,118	2,771,489
Ontario[1]	**22,256,228**	**30,922,520**	**53,178,748**	**23,928,607**	**31,457,441**	**55,386,048**
Amherstburg	3,250	169,746	172,996	2,952	175,635	178,587
Cornwall	935	251,302	252,237	80	190,256	190,336
Fort William	3,148,730	736,107	3,884,837	3,098,761	601,471	3,700,232
Hamilton	289,718	5,904,358	6,194,076	444,834	7,041,204	7,486,038
Kingston	796,405	1,080,923	1,877,328	711,467	1,008,538	1,720,005
Little Current	144,290	592,814	737,104	157,664	603,739	761,403
Michipicoten Harbour	1,034,673	176,157	1,210,830	1,091,194	107,691	1,198,885
Midland	13,921	1,357,389	1,371,310	10,174	1,242,064	1,252,238
Port Arthur	6,938,513	387,827	7,326,340	8,659,708	332,009	8,991,717
Port Colborne	1,980,819	2,399,269	4,380,088	1,523,471	1,811,947	3,335,418
Port Credit	179,880	286,571	466,451	212,924	360,002	572,926
Prescott	1,450,126	1,990,376	3,440,502	562,262	957,703	1,519,965
Sarnia	1,777,858	1,263,875	3,041,733	1,800,049	1,231,325	3,031,374
Sault Ste. Marie	317,486	3,173,933	3,491,419	525,097	4,051,719	4,576,816
Thorold	200,135	777,313	977,448	199,958	759,909	959,867
Toronto	745,703	3,660,722	4,406,425	808,518	3,960,590	4,769,108
Windsor	378,148	676,142	1,054,290	647,232	981,808	1,629,040
Manitoba (Churchill)	**594,325**	**53,382**	**647,707**	**658,983**	**65,023**	**724,006**
British Columbia[1]	**16,963,419**	**8,619,106**	**25,582,525**	**18,695,835**	**10,207,650**	**28,903,485**
Chemainus	441,206	16,628	457,834	510,898	47,788	558,686
Nanaimo	470,325	248,838	719,163	475,809	384,392	860,201
New Westminster	1,658,264	713,539	2,371,803	1,981,282	810,301	2,791,583
Ocean Falls	243,305	315,569	558,874	251,719	395,968	647,687
Port Alberni	375,174	336,497	711,671	431,745	322,166	753,911
Powell River	406,239	776,940	1,183,179	497,591	882,084	1,379,675
Prince Rupert	318,166	464,466	782,632	302,954	489,995	792,949
Vancouver	8,335,835	3,276,103	11,611,938	7,916,689	3,913,739	11,830,428
Victoria	1,055,650	694,709	1,750,359	864,471	600,301	1,464,772
Totals[2]	**78,668,423**	**69,912,598**	**148,581,021**	**90,683,479**	**74,253,038**	**164,936,517**

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[1] Includes small ports not shown separately.

[2] Includes N.W.T.

The freight movement through a large port takes a number of different forms. The overseas movement of freight loaded on and unloaded from sea-going vessels frequently constitutes a surprisingly small part of the total. Usually the volume from coasting vessels is larger. There is, as well, the in-transit movement in vessels that pass through the harbour without loading or unloading and the movement from one point to another within the harbour, which in many ports amounts to a large volume.

Since 1957, shipping statistics are available covering traffic in and out of both customs and non-customs ports. Table **5** shows the principal commodities loaded and unloaded in foreign and coastwise trade at the ten ports handling the largest cargo volumes in 1959.

5.—Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports Handling the Largest Tonnages in 1959

NOTE.—Only commodities totalling over 50,000 tons are listed.

Port and Commodity	International Seaborne Shipping		Coastwise Shipping		Total Seaborne and Coastwise
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	tons
Montreal—					
Wheat	1,312,187	133,875	8,109	1,460,356	2,914,527
Petroleum oils	50,703	668,773	1,825,746	74,628	2,619,850
Coal, bituminous	164	551,985	362,215	1,440,757	2,355,121
Petroleum, crude	—	1,602,551	179,202	44,357	1,826,110
Gasoline	—	63,668	833,386	23,462	920,516
Corn	233,521	338,334	—	22,120	593,975
Barley	113,467	62,891	175	171,853	348,386
Gypsum	—	26	—	329,954	329,980
Sugar, raw and refined	—	294,016	17,212	—	311,228
Sand, gravel and stone	—	66	—	298,000	298,066
Flaxseed	105,673	62,624	—	108,448	276,745
Soybeans	103,925	87,602	—	53,695	245,222
Iron ore	62,887	101,805	—	27,915	192,607
Cement	—	2,516	152,232	3,298	158,046
Oats	23,829	2,380	723	110,016	136,948
Iron and steel bar, etc.	7,947	105,009	13,510	8,285	134,751
Flour, grain	130,511	229	—	1,680	132,420
Chemicals and chemical products	38,595	57,883	5,153	26,200	127,831
Autos, trucks, parts	7,493	75,107	2,046	95	84,741
Iron and steel scrap	62,316	—	—	2,322	64,638
Coal, anthracite	—	64,178	—	—	64,178
Sulphur	34,741	28,607	—	—	63,348
Malt	10,280	—	67	48,951	59,298
Molasses	—	53,730	—	—	53,730
Totals, Commodities Listed	**2,298,239**	**4,357,855**	**3,399,776**	**4,256,392**	**14,312,262**
Totals, All Commodities	**3,601,922**	**5,689,607**	**4,003,165**	**4,646,870**	**17,941,564**
Sept Îles—					
Iron ore	12,328,299	—	2,241,119	—	14,569,418
Petroleum oils	—	137,025	1,420	34,196	172,641
Totals, Commodities Listed	**12,328,299**	**137,025**	**2,242,539**	**34,196**	**14,742,059**
Totals, All Commodities	**12,371,539**	**141,291**	**2,256,430**	**260,461**	**15,029,721**
Vancouver—					
Wheat	3,002,706	3,584	14,991	—	3,021,281
Sand, gravel and stone	—	81,600	10,851	923,367	1,015,818
Pulpwood and chips	347,613	20	590,340	38,132	976,105
Logs, posts, poles, etc.	16,182	36,187	49,364	859,774	961,507
Petroleum oils	17,939	112,719	751,415	5,460	887,533
Barley	644,863	—	—	—	644,863
Lumber, timber, box, etc.	464,339	13,895	7,425	71,332	556,991
Firewood' hogged fuel	179,146	240	309,140	10,214	498,740
Newsprint	5,172	5	1,798	247,240	254,215
Flour, grain	215,833	88	15	—	215,936
Flaxseed	165,442	—	—	—	165,442
Gasoline	63,323	3,255	86,118	1,937	154,633

5.—Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports Handling the Largest Tonnages in 1959—continued

Port and Commodity	International Seaborne Shipping		Coastwise Shipping		Total Seaborne and Coastwise
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	tons
Vancouver—concluded					
Cement	3,805	1,190	2,621	121,089	128,705
Iron and steel bar, etc.	5,477	86,247	3,184	1,626	96,534
Chemicals and chemical products	11,967	25,889	54,674	2,141	94,671
Rapeseed	84,247	—	—	—	84,247
Sugar, raw and refined	—	80,247	—	—	80,247
Salt	—	78,281	1,756	—	80,037
Oats	75,943	—	—	—	75,943
Wood pulp	40,953	—	210	20,395	61,558
Asbestos	17,436	33,372	271	156	51,235
Totals, Commodities Listed	**5,362,386**	**556,819**	**1,884,173**	**2,302,863**	**10,106,241**
Totals, All Commodities	**5,600,821**	**965,634**	**2,315,868**	**2,948,105**	**11,830,428**
Port Arthur—					
Wheat	208,108	—	3,582,266	—	3,790,374
Iron ore	2,641,251	—	597,459	—	3,238,710
Barley	181,076	—	566,398	—	747,474
Oats	5,835	—	383,679	—	389,514
Coal, bituminous	—	110,098	—	—	110,098
Flaxseed	26,752	—	72,665	—	99,417
Rye	68,911	—	13,884	—	82,795
Pulpwood and chips	72,900	—	—	—	72,900
Malt	—	—	66,184	—	66,184
Totals, Commodities Listed	**3,204,833**	**110,098**	**5,282,535**	—	**8,597,466**
Totals, All Commodities	**3,260,969**	**144,912**	**5,398,739**	**187,097**	**8,991,717**
Hamilton—					
Coal, bituminous	—	3,064,846	—	9,050	3,073,896
Iron ore	63	1,734,842	—	1,243,942	2,978,847
Petroleum oils	20	212,935	9,001	164,874	386,830
Sand, gravel and stone	—	28,364	93,965	99,667	221,996
Iron and steel scrap	535	187,256	—	—	187,791
Soybeans	113	54,131	—	—	54,244
Totals, Commodities Listed	**731**	**5,282,374**	**102,966**	**1,517,533**	**6,903,604**
Totals, All Commodities	**65,297**	**5,393,479**	**379,537**	**1,647,725**	**7,486,038**
Halifax—					
Crude petroleum	—	2,352,721	—	—	2,352,721
Gypsum	1,749,937	—	111,702	—	1,861,639
Petroleum oils	39,580	346,578	1,007,281	15,661	1,409,100
Gasoline	—	116,888	380,717	78,160	575,765
Wheat	336,468	—	—	18,716	355,184
Flour, grain	69,827	—	3,098	2,415	75,340
Cement	—	276	35	58,766	59,077
Totals, Commodities Listed	**2,195,812**	**2,816,463**	**1,502,833**	**173,718**	**6,688,826**
Totals, All Commodities	**2,506,096**	**3,083,569**	**1,581,791**	**225,700**	**7,397,156**
Toronto—					
Coal, bituminous	—	1,209,652	13,197	50,605	1,273,454
Petroleum oils	3	217,744	81,587	375,527	674,861
Wheat	—	—	106,504	247,792	354,296
Soybeans	—	285,611	—	16,740	302,351
Cement	—	—	—	241,966	241,966
Sand, gravel and stone	—	15,655	1,600	196,328	213,583
Gasoline	—	46,817	157,402	5,200	209,419
Limestone	—	—	—	192,115	192,115
Barley	—	—	20,352	156,083	176,435
Sugar, raw and refined	—	97,722	255	12,104	110,081
Iron and steel scrap	63,743	7,604	—	—	71,347
Totals, Commodities Listed	**63,746**	**1,880,805**	**380,897**	**1,494,460**	**3,819,908**
Totals, All Commodities	**257,522**	**2,170,907**	**550,996**	**1,789,683**	**4,769,108**

5.—Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports Handling the Largest Tonnages in 1959—concluded

Port and Commodity	International Seaborne Shipping		Coastwise Shipping		Total Seaborne and Coastwise
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	tons
Sault Ste. Marie—					
Coal, bituminous	—	2,038,070	2,719	—	2,040,789
Iron ore	14,436	790,037	—	506,627	1,311,100
Limestone	—	443,902	—	—	443,902
Iron, pig and bloom	275,325	—	—	1,850	277,175
Petroleum oils	—	62,605	2,800	95,502	160,907
Iron and steel bar, etc.	54,782	3,000	82,027	—	139,809
Gasoline	—	—	—	79,854	79,854
Totals, Commodities Listed	**344,543**	**3,337,614**	**87,546**	**683,833**	**4,453,536**
Totals, All Commodities	**377,485**	**3,349,093**	**147,612**	**702,626**	**4,576,816**
Quebec—					
Petroleum oils	—	522,014	92,308	467,910	1,082,232
Pulpwood and chips	29,982	—	5,074	955,559	990,615
Wheat	266,775	—	—	244,312	511,087
Gasoline	—	42,996	26,257	359,934	429,187
Asbestos	203,533	3	—	—	203,536
Coal, bituminous	—	31,443	500	156,448	188,391
Newsprint	187,366	12	—	—	187,378
Barley	22,480	—	—	126,116	148,596
Oats	—	—	140	94,395	94,535
Cement	—	736	15,997	33,953	50,686
Totals, Commodities Listed	**710,136**	**597,204**	**140,276**	**2,438,627**	**3,886,243**
Totals, All Commodities	**852,516**	**748,597**	**190,989**	**2,477,173**	**4,269,275**
Fort William—					
Wheat	123,793	—	1,775,112	—	1,898,905
Barley	260,675	—	307,698	—	568,373
Petroleum oils	—	5,200	23,700	146,152	175,052
Oats	2,623	—	155,161	—	157,784
Newsprint	119,868	—	—	—	119,868
Gasoline	—	4,650	—	101,432	106,082
Flaxseed	32,104	—	52,627	—	84,731
Coal, bituminous	—	80,420	—	—	80,420
Limestone	—	53,959	—	—	53,959
Flour, grain	7,241	—	43,474	340	51,055
Totals, Commodities Listed	**546,304**	**144,229**	**2,357,772**	**247,924**	**3,296,229**
Totals, All Commodities	**589,088**	**162,150**	**2,509,673**	**439,321**	**3,700,232**

Subsection 2.—Harbours

Water transportation cannot be studied with any degree of completeness without taking into consideration the co-ordination of land and water transportation at many of the ports. Facilities provided to enable interchange movements include the necessary docks and wharves, some for passenger traffic but most of them for freight, warehouses for the handling of general cargo, and special equipment for such bulk freight as lumber, coal, oil and grain. Facilities may include cold storage warehouses, harbour railway and switching connections, grain elevators, coal bunkers, oil storage tanks and, in the chief harbours, dry dock accommodation.

Eight of the principal harbours of Canada are administered by the National Harbours Board. Eleven other harbours come under the supervision of the Department of Transport and are administered by commissions that include municipal as well as Federal Government appointees. In addition, there are about 300 public harbours that are under the direct supervision of the Department of Transport. These harbours are administered under rules and regulations approved by the Governor General in Council. Harbour masters have been appointed by the Minister of Transport for 132 of these harbours, their remuneration being paid from fees levied on vessels under the terms of the Canada Shipping Act.

At most ports, in addition to the harbour facilities operated by the operating authorities, there are dock and handling facilities owned by private companies such as railway, pulp and paper, oil and sugar industries. At several of the ports there are also dry dock facilities.

National Harbours Board.—The National Harbours Board, a Crown corporation established in 1936, is charged with the administration and operation of the following properties: port facilities such as wharves and piers, transit sheds, grain elevators, cold storage warehouses, terminal railways, etc., at the harbours of Halifax, Saint John, Chicoutimi, Quebec, Trois Rivières, Montreal, Vancouver, and Churchill; grain elevators at Prescott and Port Colborne; and the Jacques Cartier Bridge at Montreal. These facilities represent a capital investment of approximately $340,000,000. Current operating revenues and expenditures are given in Table 26, p. 833.

6.—Facilities of the Larger Harbours Administered by the National Harbours Board, as at Dec. 31, 1960

Note.—The facilities at these ports include those under the control of other agencies as well as those of the National Harbours Board.

Item	Halifax	Saint John	Quebec	Trois Rivières	Montreal	Vancouver
Minimum depth of approach channel . . . . ft.	51	30	35	35	35	39
Harbour railway . . . . miles	31	64	23	5	63	75
Piers, wharves, jetties, etc. . . . No.	88	34	42	21	129	107
Length of berthing . . . . ft.	35,445	24,550	33,600	9,188	64,895	35,580
Transit-shed floor space . . . . sq. ft.	1,464,774	1,000,000	658,000	290,800	3,048,000	1,552,600
Cold storage warehouse capacity . . . . cu. ft.	1,719,000	900,000	500,000	—	2,900,000	3,633,297
Grain Elevators—						
Capacity . . . . bu.	4,152,500	3,000,000	6,000,000[1]	6,800,000	16,762,000	21,775,500
Loading rate . . . . bu. per hr.	90,000	150,000	90,000	40,000	736,000	320,000
Floating crane capacity . . . . tons	100	65	75	—	90	85
Coal dock storage capacity . . . . "	32,000	—	215,000	300,000	1,215,000	—
Oil tank storage capacity . . . . gal.	200,813,000	35,873,000	150,949,000	9,327,000	1,018,440,000	234,589,277
Locomotive crane capacity (two) . . . . tons	—	25	—	—	—	—
Electric luffing crane capacity (two) . . . . tons per hr.	—	180[2]	—	—	—	—

[1] Includes a 3,000,000-bu. grain storage shed connected with the elevator. [2] Sugar.

Subsection 3.—Canals

The canals and canalized waters of Canada under the jurisdiction of the Department of Transport together with those under the jurisdiction of the St. Lawrence Seaway Authority comprise a series of waterways providing navigation for 1,875 miles inland from salt water.

The canals included under the two classifications—Seaway Canals and Department of Transport Canals— are listed in Table 7 with their locations, lengths and lock complement. In addition to these, the federal Department of Public Works administers the St. Andrew's

Lock (length, width and draught, respectively, 215, 45 and 17 feet) on the Red River at Selkirk, Man., and the lock at Poupore, Que. A few small locks are operated by provincial authorities.

During 1959, 51,076,132 tons of freight and 30,559 vessels passed through the canals as compared with 35,096,587 tons of freight and 27,451 vessels during 1958. In addition, to freight and passenger vessels, thousands of pleasure craft are docked through the canals. Vessels locking at Sault Ste. Marie during 1959 carried 193,721 passengers as compared with 139,729 in 1958.

7.—Lengths of Channels and Dimensions of Locks under the Control of the St. Lawrence Seaway Authority or the Department of Transport

Name	Location	Length of Channel[1]	Locks			
			No.	Minimum Dimensions		
				Length	Width	Depth
		miles		ft.	ft.	ft.
Seaway Canals[2]						
Main Route—						
South Shore	Montreal to Caughnawaga	20	2	766	80	30
Beauharnois	Melocheville to Lake St. Francis	15	2	766	80	30
Iroquois	Iroquois Point	1	1	766	80	30
Welland	Port Weller, Lake Ontario, to Port Colborne, Lake Erie	27.60	8	859	80	30
Non-toll—						
Lachine	Montreal to Lachine	8.74	5	270	45	14
Cornwall (not through canal)	Cornwall to Closure dyke	3.50	4	270	43.67	14
Sault Ste. Marie	St. Mary's Rapids, Sault Ste. Marie	1.38	1	900	60	18.25
Department of Transport Canals						
Atlantic Area—						
Canso Canal	Canso Causeway, N.S.	0.70	1	820	80	28
St. Peter's	St. Peter's Bay to Bras d'Or Lakes, Cape Breton, N.S.	0.50	1	300	47.4	17
Richelieu River—						
St. Ours	St. Ours, Que.	0.12	1	339	45	12
Chambly	Chambly to St. Johns, Que.	11.78	9	120.5	23.25	6.5
Ottawa and Rideau Rivers—						
Ste. Anne	Junction of St. Lawrence and Ottawa Rivers	0.12	1	200	45	9
Carillon	Carillon Rapids, Ottawa River	0.94	2	200	45	9
Grenville	Long Sault Rapids, Ottawa River	5.94	5	200	45	9
Rideau	Ottawa to Kingston	123.53	47	134	33	5.5
	Rideau Lake to Perth (Tay Branch)	6.82	2	134	33	5.5
Lake Ontario to Georgian Bay—						
Trent	Trenton to Peterborough lock, Peterborough	88.74	18	175	33	8[3]
	Peterborough lock to Swift Rapids	135.71	24	134	33	6
	Swift Rapids to Big Chute	8.00	—	—	—	4
	Big Chute to Port Severn	8.11	1	100	25	6
	Sturgeon Lake to Lindsay (Scugog Branch)	10.00	1	142	33	6
	Lindsay to Port Perry (Scugog Branch)	25.00	—	—	—	4.5
Murray	Isthmus of Murray, Bay of Quinte	7.53	—	—	—	8.5[4]

[1] Minimum depth of Seaway canals is 27 feet and minimum width 200 feet. [2] Wiley-Dondero canal and two locks near Massena, N.Y., are in United States territory; dimensions are approximately the same as those of Canadian facilities. [3] Notice must be given by vessels of more than six-foot draught. [4] With Lake Ontario at elevation of 243 feet.

8.—Traffic through Canadian Canals, by Nationality of Vessel, Navigation Seasons 1950-59

NOTE.—Figures include duplications where vessels use two or more canals. Figures from 1886 are available in the corresponding table of previous Year Books beginning with the 1902 edition.

Navigation Season	Canadian		United States		United Kingdom		Other	
	Vessels	Registered Tonnage	Vessels	Registered Tonnage	Vessels	Registered Tonnage	Vessels	Registered Tonnage
	No.	No.	No.	No.	No.	No.	No.	No.
1950	21,179	21,989,263	2,785	3,175.566	[1]	[1]	456	338,636
1951	22,141	22,951,468	2,993	3,987,700	[1]	[1]	414	309,972
1952	22,565	25,608,373	3,081	3,686,781	[1]	[1]	676	514,224
1953	23,378	27,845,139	2,984	3,777,571	[1]	[1]	1,201	919,875
1954	21,066	25,303,262	3,145	3,245,555	[1]	[1]	1,081	893,778
1955	22,758	27,709,232	3,950	3,798,290	200	132,858	1,264	1,044,774
1956	27,473	31,019,188	3,776	3,675,511	267	186,978	1,349	1,141,259
1957	24,191	27,726,358	3,324	3,802,909	332	221,254	1,589	1,364,205
1958	21,763	26,635,559	3,216	3,029,624	302	198,926	2,170	1,793,309
1959	21,363	28,706,462	4,819	4,233,936	1,125	3,130,140	3,252	7,321,449

[1] Included with Canadian vessels.

9.—Freight Traffic through Canadian Canals by Origin of Cargo, Navigation Seasons 1950-59

NOTE.—Figures include duplications where cargoes pass through two or more canals. Figures from 1886 are available in the corresponding table of previous Year Books beginning with the 1902 edition.

Navigation Season	Canada		United States		United Kingdom		Other		Total
	Tons	P.C. of Total	Tons	P.C. of Total	Tons	P.C. of Total	Tons	P.C. of Total	Tons
1950	15,138,009	55.2	12.301,067	44.8	[1]	[1]	[1]	[1]	27,439,076
1951	16,004,284	54.6	13,320,750	45.4	[1]	[1]	[1]	[1]	29,325,034
1952	17,245,051	55.0	14,109,088	45.0	[1]	[1]	[1]	[1]	31,354,139
1953	18,464.479	55.3	14,908,585	44.7	[1]	[1]	[1]	[1]	33,373,064
1954	17,237,542	57.3	12,833,159	42.7	[1]	[1]	[1]	[1]	30,070,701
1955	20,002.540	57.4	14,177.878	40.7	120,827	0.3	572,953	1.6	34,874,198
1956	24.698.001	61.7	14,457,217	36.1	106,448	0.3	754.899	1.9	40,016,565
1957	21.459.552	57.6	15,021,930	40.3	151,550	0.4	597,317	1.6	37.230,349
1958	21.832,526	62.2	12,177,376	34.7	223,059	0.6	863,626	2.5	35,096,587
1959	30,829,746	60.4	17,134,694	33.5	326,992	0.6	2,784,700	5.5	51,076,132

[1] Included with United States.

10.—Tonnage of Products Carried by Canal, classified by Commodity Group, Navigation Season 1959

NOTE.—Figures include duplications where cargoes pass through two or more canals.

Canal	Agricultural Products	Animal Products	Manufactures and Miscellaneous	Forest Products	Mineral Products	Tota
	tons	tons	tons	tons	tons	tons
Sault Ste. Marie	322,180	30	749.019	11,205	150,260	1,232,694
Welland Ship	8,706.422	222.679	4,855,016	364,952	13,356,955	27,506,024
St. Lawrence River	7,512,193	238,235	4,597,867	357,185	8,515.800	21,221,280
Richelieu River	—	—	94,450	—	14,552	109,002
St. Peter's	32	405	286	16	80	819
Murray	—	—	90	—	—	90
Ottawa River	—	—	43	—	327,600	327,643
Rideau	—	—	3	55	—	58
Trent	—	—	83	—	—	83
St. Andrew's	85	1,806	1,911	125	6	3,933
Canso	39,303	16,525	521,154	16,147	81,377	674,506
Totals	**16,580,215**	**479,680**	**10,819,922**	**749,685**	**22,446,630**	**51,076,132**

11.—Freight Traffic through Canadian Canals, by Direction and Origin, Navigation Season 1959

NOTE.—Figures include duplications where cargoes pass through two or more canals.

Canal	From Canadian to Canadian Ports		From Canadian to United States Ports		From United States to United States Ports	
	Up	Down	Up	Down	Up	Down
	tons	tons	tons	tons	tons	tons
Sault Ste. Marie	323,149	526,481	1,322	240,645	28,571	9,938
Welland Ship	1,346,477	5,338,644	6,781,847	31,176	334,233	676,394
St. Lawrence River	3,447,394	4,631,137	5,659,993	114	10,758	25,830
Richelieu River	51,155	8,714	27,603	—	—	—
St. Peter's	262	557	—	—	—	—
Murray	90	—	—	—	—	—
Ottawa River	43	327,600	—	—	—	—
Rideau	53	5	—	—	—	—
Trent	34	47	—	—	—	—
St. Andrew's	2,035	1,898	—	—	—	—
Canso	419,743	160,250	162	19,275	—	—
Totals	**5,590,435**	**10,995,333**	**12,470,927**	**291,210**	**373,562**	**712,162**

Canal	From United States to Canadian Ports		Between other Foreign Ports and United States Ports		Between other Foreign Ports and Canadian Ports	
	Up	Down	Up	Down	Up	Down
	tons	tons	tons	tons	tons	tons
Sault Ste. Marie	78,220	10,381	4,470	5,375	1,964	2,178
Welland Ship	23,056	8,477,193	1,061,212	2,829,531	49,741	556,520
St. Lawrence River	84,765	1,671,026	1,105,425	2,833,847	846,634	904,357
Richelieu River	—	21,407	—	—	—	123
St. Peter's	—	—	—	—	—	—
Murray	—	—	—	—	—	—
Ottawa River	—	—	—	—	—	—
Rideau	—	—	—	—	—	—
Trent	—	2	—	—	—	—
St. Andrew's	—	—	—	—	—	—
Canso	14,167	—	—	—	42,246	18,663
Totals	**200,208**	**10,180,009**	**2,171,107**	**5,668,753**	**940,585**	**1,481,841**

Canal	Traffic by Direction		Origins of Cargo			Total Cargo
	Up	Down	Canada	United States	Other Countries	
	tons	tons	tons	tons	tons	tons
Sault Ste. Marie	437,696	794,998	1,093,775	132,485	6,434	1,232,694
Welland Ship	9,596,566	17,909,458	14,054,664	12,340,407	1,110,953	27,506,024
St. Lawrence River	11,154,969	10,066,311	14,642,995	4,626,226	1,952,059	21,221,280
Richelieu River	78,758	30,244	87,595	21,407	—	109,002
St. Peter's	262	557	819	—	—	819
Murray	90	—	90	—	—	90
Ottawa River	43	327,600	327,643	—	—	327,643
Rideau	53	5	58	—	—	58
Trent	34	49	81	2	—	83
St. Andrew's	2,035	1,898	3,933	—	—	3,933
Canso	476,318	198,188	618,093	14,167	42,246	674,506
Totals	**21,746,824**	**29,329,308**	**30,829,746**	**17,134,694**	**3,111,692**	**51,076,132**

The figures in Tables **10** and **11** include duplications where the same freight passes through two or more canals, but in Table **12** duplications in the traffic passing through the St. Lawrence and Welland Ship canals and the Canadian lock at Sault Ste. Mari have been eliminated wherever possible.

Grain trans-shipped at Georgian Bay, Lake Erie, or other ports above Montreal is treated as new cargo and as most of this grain has passed through either the Canadian or United States locks at Sault Ste. Marie there are still duplications in the data because of this treatment. These duplications cannot be avoided when net totals for the Canadian canals are computed because it is impossible to ascertain which lock at Sault Ste. Marie was used by the grain reloaded at Port Colborne, Ont., or other trans-shipping port.

12.—St. Lawrence-Great Lakes Traffic using St. Lawrence, Welland Ship and Sault Ste. Marie Canals, 1959

Canals Used	Up-bound Freight	Down-bound Freight	Total
	tons	tons	tons
Traffic using Canadian St. Lawrence-Great Lakes System	**13,679,651**	**20,736,916**	**34,416,567**
St. Lawrence only	3,777,031	2,287,542	6,064,573
St. Lawrence and Welland Ship	7,332,257	7,252,916	14,585,173
St. Lawrence, Welland Ship and Sault Ste. Marie	45,905	186,835	232,740
Welland Ship only	2,132,667	10,401,460	12,534,127
Welland Ship and Sault Ste. Marie	85,443	68,247	153,690
Sault Ste. Marie only	306,348	539,916	846,264
Traffic using United States Locks at Sault Ste. Marie only	**10,269,878**	**59,403,759**	**69,673,637**
Totals	**23,949,529**	**80,140,675**	**104,090,204**

Traffic through the Sault Ste. Marie canals, Canadian and United States, has fluctuated between a high of 128,489,000 tons reached in 1953 and a low of 70,906,000 tons in 1959. The dominant traffic from a tonnage aspect is iron ore which also reached its highest point in 1953 at 98,658,000 tons, decreasing to 54,188,000 tons in 1958 and 47,214,000 tons in 1959. Soft coal has usually been second in volume to iron ore and in the past ten years has declined from 13,301,000 tons in 1950 to a low of 6,389,000 in 1958, rising to 7,361,000 tons in 1959. Although wheat is generally third in tonnage, in 1958 and 1959 it was in second place totalling 7,478,000 and 7,496,000 tons, respectively. Its value over the past quarter-century has been generally higher than that of either iron ore or coal. Other grains have been about one-quarter to one-fifth of the wheat tonnage and a smaller ratio of the value.

Canadian use of the Panama Canal.—The use of the Panama Canal as a transport facility for the movement of goods from one Canadian port to another is of relatively minor importance. Of the total of 4,195,000 long tons of cargo leaving the West Coast of Canada in the year ended June 30, 1960 and passing through the Panama Canal, only 44,000 long tons were destined for Eastern Canadian ports. Similarly, of the 495,000 long tons of cargo leaving Eastern Canadian ports and passing through the Panama Canal, 34,000 long tons were destined for Western Canadian ports. The total tonnage passing through the Panama Canal and arriving in Canadian West Coast ports from any origin, Canada or elsewhere, amounted to 685,000 long tons in the year ended June 30, 1960; the total from any origin arriving at Eastern Canadian ports after having passed through the Panama Canal was 655,000 long tons.

Subsection 4.—The St. Lawrence Seaway

Events leading up to the beginning of the St. Lawrence Seaway project and the progress made during the years of its construction are covered in the 1954 to 1959 Year Books. A special article carried in the 1956 edition (pp. 821-829) gives detailed information on Great Lakes–St. Lawrence waterway traffic immediately prior to the beginning of construction on the project and another special article carried in the 1960 Year Book, (pp. 851-860) covers the story of the Seaway, its new facilities and services and the movement of freight during the first year of its operation.

The St. Lawrence Seaway Authority, constituted as a Corporation by Act of Parliament in 1951 (RSC 1952, c. 242), undertook the construction (and subsequent maintenance and operation) of Canadian facilities between Montreal and Lake Erie to allow 27-foot navigation, concurrently with the construction of similar facilities in the International Rapids Section of the St. Lawrence River by the Saint Lawrence Seaway Development Corporation of the United States. The Seaway was opened to commercial traffic on Apr. 1, 1959 and officially opened on June 26, 1959. With the opening of the Seaway, certain ancillary canals were transferred to the jurisdiction of the St. Lawrence Seaway Authority for operation and maintenance purposes. These include the Lachine, a section of the Cornwall Canal, a portion of the third Welland Canal and the Canadian locks at Sault Ste. Marie. Tolls are not assessed against vessel movements on these waterways and traffic data for them are not included in this Subsection.

Tables **13** and **14** give combined traffic statistics of the St. Lawrence and Welland Canals for the year 1960 (the first available in this form). Duplicate transits are eliminated so that the figures show the actual total movement of goods through the St. Lawrence Seaway. On this basis, 5,152 ships carrying more than 11,058,000 tons of cargo moved upbound through the Seaway in 1960 and 5,124 vessels carrying 22,648,000 tons moved downbound. Ocean-going ships carried 23.8 p.c. of the total cargoes, lakers 76.1 p.c. and other craft 0.1 p.c. There is still evident an imbalance of loading, 49.7 p.c. of the gross registered tonnage of all vessels upbound being in ballast compared with 50.3 p.c. loaded. Downbound, however, only 17.6 p.c. of the tonnage was in ballast.

Of the total tonnage carried upbound in 1960, 8,946,000 tons were domestic cargo and 2,113,000 foreign traffic; downbound, 17,333,000 tons were domestic freight and 5,315,000 tons were carried to and from foreign ports.

On the Montreal–Lake Ontario section, upbound freight decreased 19.8 p.c. in 1960 compared with 1959, but downbound traffic increased by 19.5 p.c. This decrease in upbound traffic was accounted for almost entirely by a reduction in the volume of iron ore shipped from St. Lawrence ports to Hamilton and Lake Erie. The number of transits both upbound and downbound were 583 fewer in 1960 than in 1959, indicating a slight increase in the size of vessel using this portion of the Seaway and in the volume of cargo carried. Bulk cargo comprised 88.9 p.c. of the total traffic through the Montreal–Lake Ontario section for 1960, amounting to 18,056,000 tons compared with 18,643,000 tons in 1959. General cargo totalled nearly 2,253,897 tons, an increase of 15.6 p.c. over the 1959 season. The principal commodities through the St. Lawrence canals were: iron ore, wheat, fuel oil, barley, corn and bituminous coal. Traffic patterns according to the origin or destination of the voyages show that 30.8 p.c. of the total movement was between two Canadian ports, one-third moved between Canadian and United States ports and 36.6 p.c. consisted of foreign trade to and from Canada and the United States.

In the Welland Canal there were 7,536 transits in 1960 and the registered gross tonnage of all transiting vessels was 35,528,265. Cargo volume amounted to 8,372,714 tons upbound and 20,876,975 downbound and bulk cargo accounted for 93.5 p.c. of the traffic. Although many vessels pass through both the St. Lawrence and the Welland Canals on "through" trips, there is a substantial amount of local traffic between Great Lakes ports which involve only the Welland Canal. These movements are largely iron ore, grain and coal. The Welland Canal traffic was nearly 9,000,000 cargo tons greater than that reported for the Montreal–Lake Ontario section.

Income of the St. Lawrence Seaway Authority for the first 12-month period of Seaway operation (1960) amounted to $9,360,642, comprising toll revenue of $7,156,249 assessed for transits through the Seaway locks between Montreal and Lake Ontario, and $1,326,497 on transits through the Welland Canal, plus sundry revenues (rentals, wharfage, bridge revenue, etc.) amounting to $877,896. Operating and maintenance expenses amounted to $4,873,082 and administrative expenses were $1,323,950, making a total of $6,197,032, including an amount of $288,089 for non-toll canals. Table **15** gives toll revenue separately for the Montreal–Lake Ontario section and the Welland Canal, variously classified for the years 1959 and 1960. Other financial statistics are given in Section 2, p. 832.

Pleasure craft locked through the Montreal–Lake Ontario section canals numbered 1,669 upbound and 1,726 downbound in 1960, and those locked through the Welland Canal numbered 677 upbound and 780 downbound.

13.—Summary Statistics of Total St. Lawrence Seaway Traffic, 1960

(Combined traffic of the Montreal–Lake Ontario Section and the Welland Canal, with duplications eliminated)

Item	Upbound			Downbound		
	No. of Transits	Gross Tons	Cargo Tons	No. of Transits	Gross Tons	Cargo Tons
Type of Vessel						
Ocean—						
Cargo	657	3,432,531	1,226,218	689	3,557,291	3,803,164
Cargo with passengers	303	1,032,980	452,108	264	919,635	855,798
Tanker	158	1,431,888	912,027	148	1,332,343	726,708
Laker—						
Cargo	2,673	13,154,737	6,768,871	2,683	13,855,301	16,377,317
Cargo with passengers	6	23,103	693	6	22,572	—
Tug and barge	337	324,879	280,841	317	331,915	423,415
Tanker	563	1,246,683	1,404,155	563	1,217,979	444,740
Other craft[1]	455	140,136	13,932	454	136,465	17,423
Totals	**5,152**	**20,786,937**	**11,058,845**	**5,124**	**21,373,501**	**22,648,565**
Type of Cargo						
Bulk	1,679	7,215,328	9,526,986	3,150	15,312,455	20,523,408
General	542	1,913,958	905,918	133	586,784	410,126
Mixed	409	1,287,225	625,941	502	1,671,728	1,715,031
Passengers[2]	130	48,058	—	130	50,024	—
In ballast—						
Ocean	271	1,985,234	—	73	758,500	—
Laker	1,807	8,219,780	—	852	2,893,658	—
Other	314	117,354	—	284	100,352	—
Type of Traffic						
Domestic—						
Canada to Canada	2,059	5,465,357	2,607,930	2,222	7,264,743	6,364,411
Canada to United States	1,656	9,625,969	5,970,451	31	123,267	37,051
United States to Canada	31	71,061	54,830	1,374	7,850,870	10,194,050
United States to United States	422	626,198	312,569	436	537,006	737,778
Foreign—						
Canada—						
Import	219	1,536,999	819,974	—	—	—
Export	—	—	—	232	1,560,948	1,002,344
United States—						
Import	765	3,461,353	1,293,091	—	—	—
Export	—	—	—	829	4,036,667	4,312,931

[1] Includes naval vessels.

[2] Upbound passengers in all types of vessel numbered 4,101 and downbound 4,748.

14.—St. Lawrence Seaway Traffic classified by Type of Cargo, 1960

(Combined traffic of the Montreal-Lake Ontario Section and the Welland Canal, with duplications eliminated)

Commodity	Cargo Tons	P.C. of Total	Commodity	Cargo Tons	P.C. of Total
Agricultural Products	**10,678,348**	**31.6**	**Forest Products**	**358,888**	**1.1**
Wheat	5,185,924	15.3	Pulpwood	332,278	1.0
Corn	1,360,907	4.0	Other forest products	26,610	0.1
Rye	97,679	0.3			
Oats	578,973	1.7	**Manufactures and Miscellaneous**	**6,337,077**	**18.8**
Barley	1,455,691	4.3	Gasoline	342,820	1.0
Flour, wheat	149,515	0.5	Fuel oil	1,761,525	5.2
Flour, edible, other	85,718	0.3	Lubricating oils and greases	266,140	0.8
Soybeans	1,003,753	3.0	Petroleum products, other	170,034	0.5
Soybean oil cake and meal	143,984	0.4	Rubber, crude, natural, synthetic	50,409	0.1
Beans and peas	74,801	0.2	Chemicals	156,742	0.5
Malt	59,417	0.2	Sodium products	125,320	0.4
Flaxseed	347,672	1.0	Tar, pitch and creosote	95,113	0.3
Other agricultural products	134,314	0.4	Pig iron	54,493	0.2
			Iron and steel, bars, rods, slabs	42,746	0.1
Animal Products	**226,104**	**0.7**	Iron and steel, nails, wire	59,991	0.2
Packing house products, edible	78,139	0.2	Iron and steel, manufactured	733,652	2.2
Hides, skins and pelts	63,032	0.2	Machinery and machines	51,087	0.2
Other animal products	84,933	0.3	Cement	140,252	0.4
			Wood pulp	110,493	0.3
Mineral Products	**15,332,053**	**45.5**	Newsprint	456,965	1.3
Bituminous coal	4,865,816	14.4	Syrup and molasses	93,949	0.3
Coke	106,106	0.3	Sugar	98,608	0.3
Iron ore	8,126,043	24.1	Food products	118,194	0.3
Aluminum ore and concentrates	120,345	0.3	Scrap iron and steel	678,550	2.0
Clay and bentonite	61,103	0.2	Other manufactures and miscellaneous	729,994	2.2
Gravel and sand	94,366	0.3			
Stone, ground or crushed	788,864	2.3			
Stone, rough	127,575	0.4	**Package Freight**	**774,940**	**2.3**
Petroleum, crude	396,653	1.2	Package freight—domestic	748,954	2.2
Salt	159,236	0.5	Package freight—foreign	25,986	0.1
Phosphate rock	99,682	0.3			
Sulphur	101,082	0.3			
Other mineral products	285,182	0.9	**Totals**	**33,707,410**	**100.0**

15.—Toll Revenue from St. Lawrence Seaway Traffic, classified by Type of Vessel and Type of Cargo, 1959 and 1960

NOTE.—Figures are for gross tolls collected only and include United States toll funds.

Item	1959[1]		1960	
	Upbound	Downbound	Upbound	Downbound
	$	$	$	$
Montreal-Lake Ontario Section				
Type of Vessel—				
Cargo	4,290,403	3,843,837	3,273,712	4,574,181
Cargo with passengers	486,970	415,458	430,754	578,302
Tug and barge	3,846	7,017	3,738	19,493
Tanker	724,608	254,034	816,821	401,274
Other craft	11,073	9,631	4,479	6,305
Totals, Montreal-Lake Ontario Section	**5,516,900**	**4,529,977**	**4,529,504**	**5,579,555**
Type of Cargo—				
Bulk	3,955,105	3,417,434	3,157,045	3,938,470
General	974,078	152,626	715,433	391,132
Mixed	447,543	777,816	493,239	1,126,581
Passengers	12,378	12,122	7,054	7,568
In Ballast—				
Ocean	58,194	25,926	77,971	29,900
Laker	57,774	131,238	75,872	82,520
Other	11,828	12,815	2,890	3,384

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[1] Excludes pleasure craft.

15.—Toll Revenue from St. Lawrence Seaway Traffic, classified by Type of Vessel and Type of Cargo, 1959 and 1960—concluded

Item	1959[1]		1960	
	Upbound	Downbound	Upbound	Downbound
	$	$	$	$
Welland Canal Section				
Type of Vessel—				
Cargo	437,057	581,559	432,679	675,443
Cargo with passengers	43,441	40,792	37,245	44,933
Tug and barge	15,418	13,548	14,257	16,759
Tanker	39,439	41,805	44,224	49,486
Other craft	4,196	4,181	1,599	1,732
Totals, Welland Canal Section	**539,551**	**681,885**	**530,004**	**788,353**
Type of Cargo—				
Bulk	266,941	561,732	235,472	654,459
General	76,171	12,850	70,350	27,514
Mixed	33,248	60,365	29,921	74,572
Passengers	8,127	8,113	2,455	3,365
In Ballast—				
Ocean	30,126	4,184	40,239	1,171
Laker	111,694	27,769	148,478	24,334
Other	13,244	6,872	3,089	2,938
Grand Totals	**6,056,451**	**5,211,862**	**5,059,508**	**6,367,908**

Excludes pleasure craft.

Subsection 5.—Marine Services of the Federal Government

The services covered in this Subsection deal with aids to navigation, including the maintenance of the St. Lawrence River Ship Channel, steamship inspection and pilotage service.

Aids to Navigation.—Included under aids to navigation are the lighthouses and the whole system of marine danger signals on the East and West Coasts of Canada, on Hudson Bay and Strait, the St. Lawrence River and Gulf, the Mackenzie River and Arctic passages, and the inland rivers and lakes—a very extensive system designed to provide safe navigation in all Canadian waters. In addition, a pilotage service is maintained in waters where navigation is difficult; this service is described at p. 829. A further aid to safe navigation is found in the chains of radio signal and direction-finding stations described under Marine Navigation at p. 867. Lists of aids to navigation, with the exception of very minor ones, are published by the Department of Transport.

16.—Marine Danger Signals Maintained in Canada, Years Ended Mar. 31, 1959 and 1960

Note.—In addition to the aids to navigation listed, approximately 10,400 unlighted buoys, balises, dolphins and beacons are maintained. Lists of marine danger signals maintained from 1929 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

Type of Signal	1959	1960	Type of Signal	1959	1960
	No.	No.		No.	No.
Lights	3,022	3,074	Hand fog horns and bells	105	98
Lightships	4	4	Lighted and combination lighted whistling and bell buoys	1,119	1,214
Light-keepers	980	930	Whistling buoys	30	30
Fog whistles and sirens	32	39	Bell buoys	110	108
Diaphones and tyfons	267	268	Explosive signals	4	3
Mechanical bells and gongs	20	18			

Navigable waters have been improved greatly by dredging in channels and harbours, by the removal of obstructions, and by the building of remedial works to maintain or control water levels. Incidental to these developments of navigable waters are works to guard shorelines and prevent erosion, and for the control of roads and bridges that cross navigable channels. Ice-breaking operations are carried on at the beginning and at the end of winter to prolong the season of navigation in important waters that freeze over—particularly in connection with sea-going shipping from Montreal—and to prevent flood conditions during the spring ice break-up.

St. Lawrence River Ship Channel.—This channel extends from about 40 miles below Quebec City to the foot of Lachine Canal at Montreal, a distance of 200 miles. About 130 miles of this distance is dredged channel.

Above Quebec the channel has a limiting depth of 35 feet at extreme low water and a minimum width of 550 feet, with additional width up to 1,500 feet at all curves and difficult points, and additional anchorage and turning areas. This section comprises about 115 miles of dredged channel. Below Quebec the limiting depth of dredged channel, about 15 miles in length, is 30 feet at low tide, with a width of 1,000 feet. An average tidal range of 15 feet in this area provides ample depth for any vessel using the St. Lawrence route. Above Quebec, maintenance requirements as a result of silting in this dredged channel are relatively minor but below the city silting is more pronounced because of tidal action.

The ship channel is well defined by buoys and the centre marked by range lights, permitting uninterrupted day and night navigation throughout the open season from about mid-April to early December. The movements of all shipping, weather and ice conditions and obstructions to traffic throughout the St. Lawrence waterway from Fame Point, Que., to Kingston, Ont., are recorded and made available to all concerned through a series of reporting stations known as the Marine Reporting Service.

A fleet of ice-breaking vessels is maintained to facilitate the movement of shipping between Montreal and the sea during the opening and closing of navigation, and to alleviate flood conditions in low-lying areas.

17.—Seasons of Open Navigation on the St. Lawrence Ship Channel, 1941-60

Note.—Figures from 1882 are given in the corresponding table of previous Year Books beginning with the 1934-35 edition.

Year	Channel Open, Quebec to Montreal[1]	First Arrival from Sea, Montreal Harbour	Last Departure for Sea, Montreal Harbour	Year	Channel Open, Quebec to Montreal[1]	First Arrival from Sea, Montreal Harbour	Last Departure for Sea, Montreal Harbour
1941	Apr. 14	Apr. 19	Dec. 17	1951	Apr. 11	Apr. 13	Dec. 13
1942	" 17	May 2	" 16	1952	" 12	" 13	" 10
1943	" 29	" 24	" 13	1953	Mar. 30	" 2	" 21
1944	" 20	Apr. 21	" 9	1954	Apr. 15	Mar. 30	" 15
1945	" 1	" 9	" 3	1955	" 17	Apr. 5	" 15
1946	" 1	" 12	" 18	1956	" 13	" 2	" 17
1947	" 16	" 19	" 5	1957	" 8	" 4	" 18
1948	" 10	" 19	" 10	1958	" 6	Mar. 30	" 23
1949	" 7	" 7	" 15	1959	" 13	Apr. 1	" 20
1950	" 18	" 18	" 7	1960	" 14	Mar. 21	" 16

[1] "Channel Open" means the route can be navigated although there may be floating ice in the river.

Steamship Inspection.—The Steamship Inspection Service was established by authority of the Canada Shipping Act. Its functions include the approval of design of the hulls, machinery and equipment of ships; inspection during construction; periodic inspection and the issue of inspection certificates; the assignment of load lines; the conditions under which dangerous goods may be carried in ships; the protection against accident of workers employed in loading and unloading ships; the prevention from pollution of Canadian territorial waters by oil from ships; and the certification of marine engineers. The Board also looks after the interests of the Federal Government in schools for marine engineers.

The Chairman and the Board of Steamship Inspection are located at Ottawa and there are field offices in the principal ocean and inland ports.

18.—Statistics of Steamship Inspection, by Inspection Division, Years Ended Mar. 31, 1959 and 1960

Division	Vessels Registered or Owned in Canada				Vessels Registered or Owned Elsewhere			
	1959		1960		1959		1960	
	No.	gross tonnage	No.	gross tonnage	No.	gross tonnage	No.	gross tonnage
St. John's, Nfld.	205	36,538	171	50,898	—	—	—	—
North Sydney, N.S.	70	12,613	70	19,047	2	657	4	10,784
Halifax, N.S.	161	97,944	179	139,701	—	—	—	—
Saint John, N.B.	43	24,012	89	20,108	—	—	4	2,703
Quebec, Que.	137	68,495	90	93,211	6	27,902	7	36,905
Sorel, Que.	81	72,286	73	60,643	—	—	—	—
Montreal, Que.	109	188,025	133	225,109	1	14,217	—	—
Ottawa, Ont.	—	—	5	149	—	—	—	—
Kingston, Ont.	98	145,028	100	137,390	—	—	—	—
Toronto, Ont.	139	341,759	141	328,524	1	60	1	832
St. Catharines, Ont.	52	125,180	50	196,724	—	—	—	—
Collingwood, Ont.	30	62,993	30	83,057	—	—	—	—
Midland, Ont.	76	141,132	63	130,314	—	—	—	—
Port Arthur, Ont.	51	42,869	49	35,014	—	—	1	29
Vancouver, B.C.	345	100,383	416	102,760	4	27,248	3	23,457
Victoria, B.C.	68	44,528	62	48,046	—	—	1	1,427
Totals	**1,665**	**1,503,785**	**1,721**	**1,670,695**	**14**	**70,084**	**21**	**76,137**

Pilotage.—Pilotage service functions under the provisions of Part VI of the Canada Shipping Act. Wherever a pilotage district has been created by the Governor in Council, qualified pilots are licensed by the pilotage authority of the district. There are in Canada 22 pilotage districts, in nine of which the Minister of Transport is the pilotage authority (see Table 19); in each of the other districts the authority is a local body appointed by the Governor in Council.

19.—Pilotage Service, by Pilotage District, Years Ended Mar. 31, 1959 and 1960

District	1959		1960	
	Ships	Net Registered Tonnage	Ships	Net Registered Tonnage
	No.		No.	
Bras d'Or Lakes, N.S.	238	544,942	224	479,700
Sydney, N.S.	2,650	6,669,086	2,401	6,711,492
Halifax, N.S.	3,510	13,515,760	3,297	13,095,640
Saint John, N.B.	1,377	4,087,580	1,562	5,701,155
Quebec, Que.	6,744	27,709,483	6,603	29,751,584
Montreal, Que.	11,053	34,882,684	10,413	34,677,084
St. Lawrence—Kingston-Ottawa, Ont.	5,337	13,517,322	5,365	15,546,625
Churchill, Man.	152	285,350	135	272,121
British Columbia	5,925	25,199,437	6,468	29,971,088
Totals	**36,986**	**126,411,644**	**36,468**	**136,206,489**

In addition there are 21 districts in Newfoundland under the local pilotage authority. These districts continued to be administered under Newfoundland statutes after union with Canada (Mar. 31, 1949). Part VI of the Canada Shipping Act with respect to pilotage has not been proclaimed in force in Newfoundland.

Section 2.—Financial Statistics of Waterways

The principal statistics available on the cost of facilities for water-borne traffic consist of the record of public expenditure on waterways. Such expenditure may be classified as capital expenditure, or investment and expenditure for maintenance and operation. Revenue from operation is also recorded. The major part of the capital expenditure for the permanent improvement of waterways is provided by the Federal Government. Capital expenditure by municipalities and private capital expenditure are confined almost entirely to terminal or dockage facilities. On the other hand, investment in shipping has come almost entirely from private sources. No figures are available regarding private investment in shipping except those appearing in the reports of the operating companies that cover only a portion of the field. There are no statistics showing the revenue of ship operators from passenger and freight traffic.

Capital Expenditure.—The only figures available of federal capital expenditure on Canadian waterways are those contained in the *Public Accounts* and the annual reports of the Departments of Transport, Public Works and Finance and in the annual report of the St. Lawrence Seaway Authority. It must be realized that such expenditure cannot be regarded as an accurate indication of the present worth of the undertakings represented. The cost of building canals and other waterways and permanent works to facilitate water transportation in Canada is represented in such reports at their original book values, no deductions having been made from the cumulative totals for depreciation from year to year or for abandonment of works that have been superseded, such as, for example, the first Welland canals and the now flooded St. Lawrence River canals. To this extent, such figures are an over-statement of the present value of the works in use. The figures are further limited by the fact that they do not include the cost of maintenance and improvements or the operation of these works, such charges having been made to the consolidated deficit account as annual expenditure and not to capital account. Thus, such capital expenditure on waterways is not included in this publication, with the exception of that made by the National Harbours Board on facilities under its jurisdiction. Capital values of the fixed assets administered by the Board are shown as at Dec. 31, 1958 and 1959 in Table **20**. These figures include all buildings, machinery and durable plant improvements and have been subject to deductions for depreciation and the scrapping or abandonment of plant and therefore represent a fair approximation of the present value of the properties.

20.—Capital Values of Fixed Assets Administered by the National Harbours Board, as at Dec. 31, 1958 and 1959

NOTE.—Compiled from the annual reports of the National Harbours Board.

Item	1958	1959	Item	1958	1959
	$	$		$	$
Harbour dredging	16,487,601	19,985,142	Floating and shore equipment	3,254,506	3,427,302
Land and land improvements	15,945,396	16,089,319	Jacques Cartier Bridge	20,907,371	22,022,545
Wharves and piers	108,492,733	120,881,168	Works under construction	37,489,541	21,644,641
Permanent sheds	31,382,082	33,805,183			
Railway systems	6,587,118	6,705,386			
Grain elevator systems	49,912,117	68,018,847	Sundry expenditure—undistributed	4,448,570	4,446,157
Cold storage systems	6,302,012	6,352,292			
Harbour buildings, service plants and equipment	7,975,785	8,290,316	**Totals**	**309,184,832**	**331,668,298**

21.—Amounts Advanced by the Federal Government to the National Harbours Board for Capital Expenditure, 1958 and 1959

NOTE.—Compiled from the annual reports of the National Harbours Board.

Harbours and Properties	1958	1959	Harbours and Properties	1958	1959
	$	$		$	$
Halifax	627,626	376,394	Montreal	16,948,220	14,651,792
Saint John	112,673	68,143	Churchill	24,571	—
Chicoutimi	8,130	72,176	Vancouver	3,337,879	1,085,532
Quebec	3,531,909	1,522,926			
Trois Rivières	1,009,424	41,985	**Totals**	**25,600,432**	**17,818,948**

Waterways Expenditure and Revenue on Consolidated Fund Account.—Expenditure under this heading (Tables 22 to 24) is mainly for the operation and maintenance of various facilities for water transport but, unfortunately, the line between operation and maintenance expenditure is not as finely drawn as is desirable. Revenue in connection with waterways of the Department of Transport, the Department of Public Works and the St. Lawrence Seaway Authority is shown in Table 25.

To facilitate water transportation, the Federal Government expends annually, in addition to the recurrent expenditure shown here, a considerable amount to cover deficits of the Canadian National (West Indies) Steamships Limited and of the National Harbours Board, and for mail subsidies and steamship subventions as shown in Table 27. Operating revenue and expenditure of facilities administered by the National Harbours Board are shown separately in Table 26.

22.—Department of Transport Expenditures on Marine Service, charged to Consolidated Deficit Account, Years Ended Mar. 31, 1959 and 1960

Service	1959	1960	Service	1959	1960
	$	$		$	$
Administration, including agencies	785,948	837,861	Marine Regulations Branch—		
Marine Works Branch—			Steamship Inspection Division	946,596	989,176
Lights and Harbours Division—			Nautical and Pilotage Division—		
Administration, operation and maintenance	5,883,114	5,911,916	Nautical Services	493,427	522,914
Construction	4,465,204	3,965,422	Pilotage Services—		
River St. Lawrence Ship Channel Division—			Administration, operation and maintenance	711,113	1,206,838
Administration, operation and maintenance	2,245,307	1,393,302	Construction	46,213	106,334
Canals Division—			Pensions to former pilots	1,800	1,800
Administration, operation and maintenance	7,070,453	2,238,684	Marine reporting service	133,056	135,056
Construction	2,655,322	1,390,924	Marine Operations Branch—Administration, operation and maintenance	13,518,520	17,133,990
Operating deficit and capital requirements of canals and works entrusted to the St. Lawrence Seaway Authority	—	2,154,639	**Totals**	**38,956,073**	**37,988,856**

23.—Department of Public Works Expenditure on Waterways (Harbours, Rivers, Roads and Bridges) charged to Consolidated Fund Account, Years Ended Mar. 31, 1959 and 1960

NOTE.—Compiled from the annual reports of the Departments concerned by the Comptroller of the Treasury, Department of Finance. Excludes expenditures on harbours administered by the National Harbours Board as shown in Table 26.

Year and Province or Territory	Dredging[1]	Construction	Improvements and Repairs	Staff and Sundries	Total
	$	$	$	$	$
1959					
Newfoundland	450,739	4,652,464	356,953	117,459	5,577,615
Prince Edward Island	706,418	2,487,766	634,276	38,604	3,867,064
Nova Scotia	335,693	1,115,057	134,894	53,170	1,638,814
New Brunswick	1,128,338	2,584,398	231,039	49,473	3,993,248
Quebec	947,614	3,359,854	944,756	291,439	5,543,663
Ontario	1,355,623	9,904,310	390,265	136,015	11,786,213
Manitoba	195,621	149,917	79,106	54,172	478,816
Saskatchewan	—	—	8,301	—	8,301
Alberta	134,401	75,400	6,690	24,223	240,714
British Columbia	1,445,212	2,315,358	859,806	751,246	5,371,622
Yukon and Northwest Territories	112,644	92,117	33,038	187,739	425,538
Totals, 1959	**6,812,303**	**26,736,641**	**3,679,124**	**1,703,540**	**38,931,608**
1960					
Newfoundland	324,763	4,677,999	290,786	156,776	5,450,324
Prince Edward Island	293,540	905,500	111,640	436,655	1,747,335
Nova Scotia	597,842	3,956,371	604,732	126,951	5,285,896
New Brunswick	2,266,474	3,169,327	227,771	11,052	5,674,624
Quebec	1,053,356	6,574,116	989,413	330,923	8,947,808
Ontario	1,044,818	6,646,201	370,783	191,621	8,253,423
Manitoba	211,280	256,057	50,669	183,200	701,206
Saskatchewan	—	—	1,004	—	1,004
Alberta	254,615	97,161	10,424	22,444	384,644
British Columbia	1,362,853	3,225,883	474,860	852,341	5,915,937
Yukon and Northwest Territories	86,070	52,110	17,136	26,091	181,407
Totals, 1960	**7,495,611**	**29,560,725**	**3,149,218**	**2,338,054**	**42,543,608**

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[1] Includes expenditures for dredging plants.

24.—St. Lawrence Seaway Authority Expenditures, Charged to Consolidated Deficit Account, 1959 (Apr. 25-Dec. 31) and 1960

Item	1959	1960
	$	$
Administration	1,134,955	1,323,950
Operating Expenses—		
Channels, canals and locks	1,149,979	1,350,208
Bridges	364,773	517,430
Grants in lieu of municipal taxes	112,616	410,897
Miscellaneous	14,558	42,882
Maintenance Expenses—		
Channels, canals and locks	402,864	831,408
Bridges and tunnel	124,842	472,990
Dredging and aids to navigation	23,094	149,517
Maintenance Expenses—concluded		
Canal lands and roads	51,040	114,860
Power transmission lines and canal lighting	27,184	50,495
Other	72,370	68,547
Operating and maintenance supervision	574,181	863,848
Totals	**4,052,456**	**6,197,032**

25.—Federal Government Revenue in connection with Waterways, Years Ended Mar. 31, 1959 and 1960[1]

NOTE.—Compiled from annual reports of the Department of Transport, the *Public Accounts* and the annual report of the St. Lawrence Seaway Authority.

Department and Item	1959	1960
	$	$
Department of Transport		
Marine Services	**3,807,774**	**4,818,102**
Canals	1,576,072	1,398,838
Fines and forfeitures	8,693	12,336
Steamship inspection	156,922	165,463
Wharf revenue	568,803	679,656
Harbour dues	158,876	165,787
Measuring surveyor's fees	504	464
Examinations—masters' and mates' fees	8,553	8,832
Pilots' licence fees (pilotage)	245	81
Pilotage fees	12,968	482,603
Pilot boat fees	—	27,020
Shipping fees	3,806	4,057
Marine steamer earnings	1,160,697	2,598,157
Signal station dues	1,532	1,560
Rentals—water lots and light-house sites	33,734	34,400
Rentals—River St. Lawrence Ship Channel Service	10,428	123,785
Sale of land, buildings, etc.	3,050	6,940
Merchant seamen's identity certificates	1,706	1,101
Miscellaneous	35,915	21,266
Refunds previous year's expenditures	48,088	28,434
Port Warden fees	17,182	57,322
Board of Transport Commissioners	**1,814**	**3,513**
Air Transport Board	**304**	**234**
Totals, Department of Transport	**3,809,892**	**4,821,849**

Department and Item	1959	1960
	$	$
Department of Public Works		
Earnings of Dry Docks	**286,629**	**356,044**
Champlain Dock, Lauzon	75,118	148,153
Lorne Dock, Lauzon	44,394	44,675
Esquimalt new dock	164,609	160,473
Selkirk repair slip	2,508	2,743
Works and Plants Leased	**102,648**	**41,749**
Kingston dry dock	12,100	12,100
Ferry privileges	297	738
Dredges and plants	90,251	28,911
Rents from water lots, etc.	104,426	93,092
Refunds against expenditure reported in previous years	53,312	33,780
Sundry receipts, test borings, etc.	2,016	1,843
Totals, Department of Public Works	**549,031**	**526,508**
St. Lawrence Seaway Authority[1]		
Tolls assessed	8,329,341	8,482,746
Rentals	498,818	498,293
Wharfage	183,573	177,405
Miscellaneous	202,743	202,198
Totals, St. Lawrence Seaway Authority	**9,214,475**	**9,360,642**

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[1] St. Lawrence Seaway Authority revenue report for Apr. 25-Dec. 31, 1959 and the calendar year 1960.

26.—Operating Revenue and Expenditure of Harbours, Elevators and Bridges under the National Harbours Board, 1958 and 1959

Harbour and Year	Operating Revenue	Operating Expend-iture	Operating Income
	$	$	$
Halifax—			
1958	1,859,423	1,555,546	303,877
1959	1,898,760	1,628,924	269,836
Saint John—			
1958	794,814	908,112	−113,298
1959	824,496	869,110	−44,614
Chicoutimi—			
1958	110,486	39,499	70,987
1959	118,420	41,584	76,836
Quebec—			
1958	2,047,749	1,676,260	371,489
1959	2,282,094	1,765,315	516,779
Trois Rivières—			
1958	414,098	77,117	336,981
1959	449,026	123,207	325,819
Jacques Cartier Bridge (Montreal)			
1958	2,104,794	353,679	1,751,115
1959	2,354,815	699,598	1,655,217

Harbour and Year	Operating Revenue	Operating Expend-iture	Operating Income
	$	$	$
Montreal—			
1958	9,319,870	6,076,232	3,243,638
1959	9,460,587	6,358,410	3,102,177
Prescott Elevator—			
1958	1,452,686	625,883	826,803
1959	876,474	472,566	403,908
Port Colborne Elevator—			
1958	906,324	527,868	378,456
1959	550,653	347,728	202,925
Churchill—			
1958	1,343,964	932,342	411,622
1959	1,403,205	1,164,376	238,829
Vancouver—			
1958	3,721,723	2,014,226	1,707,497
1959	4,001,309	2,140,846	1,860,463

Shipping Subsidies.—Table 27 shows the net amounts of steamship subventions paid in connection with contracts made for the maintenance of essential coastal and inland water shipping services. The payment of these subventions is administered by the Canadian Maritime Commission under statutory authority.

27.—Steamship Subventions, Years Ended Mar. 31, 1960 and 1961

Service	1960	1961
	$	$
Western Local Services—		
Vancouver and Northern British Columbia ports	187,020	194,500
Vancouver and West Coast of Vancouver Island, B.C.	90,717	88,000
Eastern Local Services—		
Baddeck and Iona, N.S.	17,500	17,500
Campobello, N.B., and Lubec, Me., U.S.A.	9,600	9,600
Cross Point, Que., and Campbellton, N.B.	40,000	35,000
Dalhousie, N.B., and Miguasha, Que.	27,500	27,500
Grand Manan and the mainland, N.B.	95,000	95,000
Halifax, Canso, Guysborough and Isle Madame, N.S.	30,000	29,110
Île aux Coudres and Les Éboulements, Que.	24,000	33,000
Île aux Grues and Montmagny, Que. (summer)	5,000	5,000
Île aux Grues and Montmagny, Que. (winter)	1,700	1,700
Magdalen Islands, Que., Cheticamp and Halifax, N.S.	—	6,667
Mulgrave and Canso, N.S.	54,900	54,900
Mulgrave, Queensport and Isle Madame, N.S.	32,500	31,250
Murray Bay and North Shore of the St. Lawrence (winter)	77,000	50,000
Owen Sound and ports on Manitoulin Island and Georgian Bay, Ont.	100,000	100,000
Pelee Island and the mainland, Ont.	64,000	53,557
Pictou, Mulgrave and Cheticamp, N.S.	17,000	15,426
Pictou, N.S., Charlottetown, P.E.I., and Magdalen Islands, Que.	174,000	174,000
Prescott, Ont., and Ogdensburg, N.Y., U.S.A.	—	—
Prince Edward Island and Newfoundland	72,000	72,000
Prince Edward Island and Nova Scotia	558,785	557,524
Quebec, Natashquan and Harrington, Que.	607,000	492,923
Quebec or Montreal, Gaspe and Magdalen Islands, Que.	189,000	259,077
Rimouski, Matane and ports on North Shore of St. Lawrence River, Que.	255,500	172,500
Rivière du Loup and St. Simeon, Que.	21,000	21,000
Saint John, N.B., Tiverton, Freeport, Westport and Yarmouth, N.S.	33,000	33,000
Sorel and Île St. Ignace, Que.	43,000	43,000
Sydney and Bay St. Lawrence, N.S.	45,000	45,000
Trois Pistoles and Les Escoumains, Que.	2,000	2,000
Yarmouth, N.S., and Rockland, Me., U.S.A.	—	4,500
Newfoundland Coastal Steamship Services	3,707,654	4,069,002
Totals	**6,581,376**	**6,793,236**

PART V.—CIVIL AIR TRANSPORT*

Section 1.—Administration and Development

Historical Developments.—Canada's aviation history dates back to 1909 when the *Silver Dart*, piloted by Jack McCurdy (Hon. J. A. D. McCurdy, former Lieutenant-Governor of Nova Scotia), flew at Baddeck, N.S. This was the first aeroplane flight by a British subject in the British Empire.

There was little aviation development in Canada until World War I. Following the War, many of Canada's wartime aviators assisted in developing air transportation services into inaccessible areas, air forestry patrols and intercity air services. During this period the flying clubs movement received government assistance in the training of pilots and engineers required by Canada's civil aviation industry.

World War II was a period of intensive construction of airports and aerodromes to meet the requirements for the training of airmen under the British Commonwealth Air Training Plan. At the end of the War, many Service-trained Canadian airmen turned to commercial flying and were absorbed by existing operating companies or helped to develop other flying services. Transatlantic air services were inaugurated by the Department of Transport during the War and were turned over to Trans-Canada Air Lines which was created by Act of Parliament in 1937 to provide for the development of a government-controlled transcontinental air service for regular scheduled operations. Canadian Pacific Air Lines was created by the amalgamation of small commercial operators for the servicing of Canada's northland. In 1949, the Canadian Pacific Air Lines was designated to provide transpacific services on behalf of Canada and in the spring of 1959 began the operation of one daily transcontinental flight each way between Montreal and Vancouver. Current operations of TCA and CPA are covered on pp. 836-837.

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* Sections 1 and 2 of this Part were revised in the Department of Transport and Section 3, except where otherwise indicated, in the Transportation and Public Utilities Section, Public Finance and Transportation Division, Dominion Bureau of Statistics. For military air transportation, see Chapter XXV on Defence of Canada.

The Control of Civil Aviation.—The control of civil aviation in Canada is under the jurisdiction of the Federal Government and is administered under the authority of the Aeronautics Act 1919 and amendments thereto. The Aeronautics Act is in three parts. Broadly speaking, Part I deals with the technical side of civil aviation comprising matters of registration of aircraft, licensing of airmen, the establishment and maintenance of airports and facilities for air navigation, air traffic control, accident investigation and the safe operation of aircraft. This Part of the Act is administered by the Director of Civil Aviation under the supervision of the Assistant Deputy Minister, Air Services, Department of Transport. Part II of the Act deals with the social and economic aspects of commercial air services and assigns to the Air Transport Board certain regulatory functions of commercial air services (see p. 778). Part III deals with matters of government internal administration in connection with the Act.

Weather Services.—Weather services are provided by the Meteorological Branch, Department of Transport, to meet the demands of the general public and all basic economic endeavours such as agriculture, industry, forestry, shipping and fishing. Meteorological service is provided to national and international aviation. The military meteorological requirements in Canada and overseas are met by special co-operative arrangements with the Department of National Defence. The reporting and forecasting of ice conditions in navigable waters, both inland and coastal, is a rapidly expanding service.

There are 54 forecast offices in Canada, one on shipboard and four in Europe. Forecast offices are linked by 55,200 miles of teletype and radioteletype circuits, and a national facsimile system 11,200 miles long is used for the distribution of meteorological information in chart form. As of Jan. 1, 1961, the Branch maintained 240 synoptic stations engaged in a round-the-clock observation program, a network of 32 radiosonde stations including five in the Arctic operated jointly with the United States, 71 stations recording upper winds, 1,650 climatological stations. One Ocean Weather Station in the Pacific, 1,000 miles west of Vancouver, is maintained under International Agreement. (See also p. 45.)

Air Industries and Transport Association.—Commercial flying schools that are members of the Air Industries and Transport Association numbered 70 at the end of 1960. During that year the number of students instructed and graduated as private pilots was 1,827, the number graduated as commercial pilots was 160 and 110,515 instructional hours were flown.

Royal Canadian Flying Clubs.—At the end of 1960 there were 39 flying clubs connected with the Royal Canadian Flying Clubs Association. The total membership was 11,255 and the aircraft available for instructional purposes numbered 209. During the year, 1,792 students were instructed and graduated as private pilots and 116 students were graduated as commercial pilots. Instructional hours of flying totalled 123,407.

International Air Agreements.—The position of Canada in the field of aviation as well as its geographical location makes imperative co-operation with other nations of the world engaged in international civil aviation. Canada took a major part in the original discussions that led to the establishment of the International Civil Aviation Organization

(ICAO) which has headquarters at Montreal, Que. A special article on The International Civil Aviation Organization and Canada's Participation Therein appears in the 1952-53 Year Book, pp. 820-827.

In recent years Canada has been a signatory to agreements concerning civil aviation with Australia, New Zealand, Belgium, Denmark, France, Ireland, Japan, Mexico, the Netherlands, Norway, Peru, Portugal, Sweden, Switzerland, the United Kingdom and the United States.

Section 2.—Air Services

Air transport services may be grouped into two broad classes—Scheduled Services and Non-scheduled Services. Services in the first group are operated by air carriers who offer public transportation of persons, mails and/or goods by aircraft, serving designated points in accordance with a service schedule and at a toll per unit. The second group includes the following:—

(1) Regular Specific Point Air Services—operated by air carriers who offer public transportation of persons, mails and/or goods by aircraft serving designated points on a route pattern and with some degree of regularity, at a toll per unit.

(2) Irregular Specific Point Air Services—operated by air carriers who offer public transportation of persons, mails and/or goods by aircraft from a designated base, serving a defined area or a specific point or points, at a toll per unit.

(3) Charter Air Services—operated by air carriers who offer public transportation of persons and/or goods by aircraft from a designated base, at a toll per mile or per hour for the charter of the entire aircraft, or at such other tolls as may be permitted by the Air Transport Board.

(4) Contract Air Services—operated by air carriers who do not offer public transportation but who transport persons and/or goods solely in accordance with one or more specific contracts.

(5) Flying Clubs—operated by air carriers incorporated as non-profit organizations for the purpose of furnishing flying training and recreational flying to club members.

(6) Specialty Services—operated by air carriers for purposes not provided for by any other class, such as flying training, recreational flying, aerial photography and survey, aerial pest control, aerial advertising, aerial patrol and inspection, etc.

Current operations of the two major airlines forming the nucleus of Canada's freight and passenger air service are outlined below.

Trans-Canada Air Lines.—During 1960, TCA flew 2,050,600,000 passenger-miles, passing the two billion passenger-mile mark for the first time in its 24-year history, and carried 3,440,303 passengers. Ton-miles of revenue commodity traffic, including excess baggage and express, totalled 20,868,000, and ton-miles of mail traffic totalled 11,593,000.

During the year the company introduced giant 127-passenger, 550-mile-an-hour DC-8 jets on transcontinental routes, linking Vancouver, Winnipeg, Toronto and Montreal, and on transatlantic routes to London and Prestwick. The Air Lines provided more than 725 round-trip seats daily across the Continent during the summer months, and more than 1,500 round-trip seats weekly across the North Atlantic to the United Kingdom and Continental Europe. At the year's end, TCA was serving 39 Canadian cities, six centres in the United States, three in the United Kingdom, France, Germany, Belgium, Switzerland and Austria in Continental Europe, Bermuda and the islands of the Caribbean—over 31,000 miles of air routes. Early in 1961, TCA began flying DC-8 jets only to all cities served in Europe.

TCA's fleet at the end of 1960 consisted of seven DC-8's, 49 Viscounts, 12 Super Constellations, 21 North Stars, seven DC-3's and two Vanguards, the first of which was delivered on Dec. 7. Four more DC-8's and 21 Vanguards have been ordered for delivery in 1961 and 1962. By late 1961, TCA expects to possess the world's first all-turbine-powered intercontinental air fleet, flying DC-8's, Vanguards and Viscounts exclusively.

1.—Passenger, Freight and Mail Traffic of Trans-Canada Air Lines, 1951-60

Source: Trans-Canada Air Lines Annual Report.

Year	Revenue Passenger Traffic[1]		Revenue Commodity Traffic[2]		Mail Traffic
	No.	passenger-miles	lb.	ton-miles	ton-miles
1951	930,691	450,840,623	10,826,333	3,861,583	3,969,371
1952	1,132,518	653,961,415	19,757,969	7,042,427	4,843,052
1953	1,307,810	759,319,800	22,996,531	7,947,113	5,373,841
1954	1,438,349	852,475,532	24,044,347	10,192,705	6,942,299
1955	1,682,195	969,392,395	30,889,383	12,175,433	7,704,144
1956	2,072,912	1,191,784,000	35,789,457	14,476,000	8,613,000
1957	2,392,713	1,385,777,000	23,987,486	15,478,000	9,855,000
1958	2,785,523	1,625,689,000	33,018,703	15,395,000	10,386,000
1959	3,209,197	1,828,902,000	37,997,398	17,753,000	10,905,000
1960	3,440,303	2,050,600,000	..	20,868,000	11,593,000

[1] Includes non-scheduled service.
[2] Includes excess baggage and express.

2.—Operating Revenue and Expenditure of Trans-Canada Air Lines, 1951-60

Source: Trans-Canada Air Lines Annual Report.

Year	Passenger	Freight[1]	Mail	Operating Revenue[2]	Operating Expenditure	Operating Surplus
	$	$	$	$	$	$
1951	28,666,505	1,913,703	5,741,000	48,010,301	43,336,120	+4,674,181
1952	42,022,616	3,730,521	7,698,641	55,057,708	52,744,741	+2,312,967
1953	48,242,942	4,111,456	7,786,119	62,236,564	61,433,700	+802,864
1954	53,123,868	4,705,513	8,371,344	68,764,252	67,731,512	+1,032,740
1955	61,105,243	6,015,910	8,297,605	77,428,254	76,770,922	+657,332
1956	74,478,516	6,769,395	8,869,934	91,306,046	89,197,115	+2,108,931
1957	86,523,981	6,392,156	9,662,585	104,995,707	96,680,353	+8,315,354
1958	101,553,258	7,513,511	9,893,622	120,554,769	108,129,734	+12,425,035
1959	114,338,529	8,306,727	9,986,475	134,678,748	120,120,189	+14,558,559
1960	127,595,694	9,063,039	10,244,192	148,986,526	134,262,645	+14,723,881

[1] Express and excess baggage.
[2] Includes other revenue.

Canadian Pacific Air Lines Limited.—Canadian Pacific Air Lines operates a 44,500-mile route pattern linking five continents as well as major cities in Canada. This pattern comprises 6,900 domestic route miles, including 2,450 miles on Canadian mainline service.

In 1960, CPA carried 350,991 passengers—a greater number than in any other year since the company's inception in 1942. The increase in passenger load, on both domestic and international routes, amounted to 15.6 p.c. over 1959. As a result of this increase in number of passengers carried, the occupied-seat-miles performed by the Air Lines during 1960 showed a corresponding advance to 544,132,000—an 18.9-p.c. increase over 1959.

CPA's international routes, 37,600 miles in extent, operate from Vancouver to Honolulu, Fiji, New Zealand and Australia on the South Pacific Service; to Japan and Hong Kong via the Great Circle Route across the North Pacific; from Vancouver and Edmonton to Amsterdam via the Polar Route; and across the Atlantic from Montreal to Portugal, Spain and Italy. A South American network serves Mexico City, Lima, Santiago and Buenos Aires. Two services link Mexico City with Toronto and Vancouver. In Canada, CPA operates a mainline transcontinental service linking Vancouver, Winnipeg, Toronto and Montreal, and a network of north-south routes in the western provinces and Yukon Territory.

At the end of 1960, the Air Lines' fleet consisted of 26 aircraft, including eight Britannia jet-prop airliners. The fleet was augmented by four 159-passenger, 600-mile-an-hour DC-8 jetliners early in 1961, and an additional five were under option.

Independent Airlines.—In addition to the two major Canadian air carriers—Trans-Canada Air Lines and Canadian Pacific Air Lines Limited—there are four domestic air carriers licensed to operate scheduled commercial air services in Canada, namely, Maritime Central Airways Limited, Charlottetown, P.E.I.; Quebecair, Inc., Rimouski, Que.; TransAir Limited, Winnipeg, Man.; and Pacific Western Airlines Limited, Vancouver, B.C.

Licensed Canadian air carriers operating in Canada as at Mar. 31, 1960 held valid operating certificates covering 43 scheduled, 128 flying training, and 908 other non-scheduled and specialty services. These non-scheduled services, in addition to providing effective access to sections of Canada that are inaccessible by other means of transportation, act as feeder lines to the scheduled airlines. They also include such specialty services as recreational flying, aerial photography and surveying, aerial pest control, aerial advertising and aerial patrol.

Maritime Central Airways Limited.—Maritime Central Airways operates in the Atlantic Provinces, the Gulf of St. Lawrence and the Eastern Arctic, serving Charlottetown and Summerside in Prince Edward Island; Moncton in New Brunswick; New Glasgow and Halifax in Nova Scotia; Stephenville, Gander and St. John's in Newfoundland; Goose Bay and Saglek in Labrador; Frobisher in the Northwest Territories; the Magdalen Islands and the French Islands of St. Pierre–Miquelon in the Gulf of St. Lawrence.

The Airways fleet includes one Super Viscount 805, two DC-4's, four C-46's, four DC-3's and two Beechcraft. The company operates daily scheduled flights throughout the Atlantic Provinces and an extensive contract freight service between the Atlantic Provinces and the Canadian Eastern Arctic; the latter service accounts for a large part of the company's revenue.

Quebecair, Inc.—Quebecair, a privately owned commercial airline with headquarters at Rimouski, serves various points in the Province of Quebec including Montreal, Quebec, Rivière du Loup, Rimouski, Mont Joli, Matane, Sept Îles, Wabush, Schefferville, Gagnon, Baie Comeau and Forestville. No point served is more than five flying hours from Montreal.

The company began operations in 1946 under the name of Rimouski Aviation Syndicate and was incorporated under the name of Rimouski Airlines in 1947. At the beginning of 1954, the newly created Rimouski Airlines bought out Gulf Aviation and formed Quebecair. Since then, passenger service has multiplied six times, air mail carried fourteen times and freight carried sixteen times. The number of passengers flown in 1960 was 119,266 and the amount of freight carried totalled 3,952,987 lb.

The Quebecair fleet consists of five DC-3's, three F-27's, two C-540's and one C-46 cargo aircraft. While the well-known DC-3 is a piston-powered aircraft, both the F-27 and the C-540 have turbo-prop engines. The former accommodates 36 passengers and the latter 52 and both types are equipped with weather radar and pressurization systems.

Pacific Western Airlines Limited.—Pacific Western Airlines Limited, with head office at Vancouver International Airport, is one of the largest independent air carriers in Canada. Total route miles in the system is close to 7,200 and services operated include scheduled mainline, local regular unit toll and charter flights in Saskatchewan, Alberta, the Northwest Territories including the Arctic Islands, and British Columbia.

Regularly scheduled mainline services are operated by Pacific Western northbound from Edmonton to Peace River, McMurray, Uranium City, Fort Smith, Fort Resolution, Fort Vermilion, Hay River, Yellowknife, Fort Simpson, Wrigley, Norman Wells and Inuvik. Regular local services are flown from Inuvik to Aklavik; from Yellowknife to Cambridge Bay; and from Inuvik to Aklavik to Fort McPherson to Arctic Red River. Local services also originate from Norman Wells to Fort Good Hope, Fort Norman, Wrigley and Fort Simpson; from Yellowknife to Rocher River, Port Radium, Coppermine and Bathurst; and from Hay River to Providence.

On the prairies, daily mainline service is scheduled between Regina, Saskatoon, Prince Albert, North Battleford and Edmonton. On the Pacific Coast, mainline services are operated from Vancouver to Comox, Powell River, Campbell River, Tofino and Port Hardy and local services are operated between Prince Rupert, Stewart, Ford's Cove, Anyox, Maple Bay and Alice Arm in northern B.C. In addition, charter services are operated out of Vancouver, Nelson, Kamloops, Prince George, Terrace and Prince Rupert; in the Northern Division from Edmonton, Peace River, Fort Smith, Hay River, Yellowknife, Inuvik and Cambridge Bay.

Aircraft operated by Pacific Western number 48 and range from DC-4's, Super 46's and DC-3's on mainline services, to Otters, Beavers and Cessnas on charter and freight flights. Revenue passengers carried in 1960 totalled 121,003 and freight and express carried amounted to 5,310,825 lb.

TransAir Limited.—TransAir Limited operates scheduled, charter and sportsmen's flights in Ontario, Manitoba and the Northwest Territories. Twenty-nine aircraft are in service from major bases at Winnipeg and Churchill and from other bases at Pickle Lake and Sioux Lookout in Ontario and Lac du Bonnet, Norway House, Flin Flon, Lynn Lake and Wabowden in Manitoba. Its scheduled DC-3 and DC-4 mainline passenger services over 2,852 unduplicated route-miles are between: Winnipeg, Dauphin, The Pas, Flin Flon, Lynn Lake and return; Winnipeg, The Pas, Churchill and return; Montreal, Ottawa, Winisk, Churchill and return; Winnipeg, Red Lake and return; Winnipeg, International Falls, (Minnesota) and return. TransAir also operates regular flights between Churchill and Rankin Inlet, Baker Lake and Coral Harbour in the Northwest Territories and from those bases to points adjacent to them. The company's head office is at Winnipeg International Airport.

Commonwealth and Foreign Scheduled Commercial Air Services.—At the end of 1960 there were 18 Commonwealth and foreign air carriers holding valid Canadian operating certificates and licences covering international scheduled commercial air services operating into Canada, as follows:—

Air France (Compagnie Nationale Air France) operates between Paris and other points in Metropolitan France, Montreal Canada, Chicago U.S.A., and points beyond.

Alitalia Airlines operates between Rome Italy, Milan Italy, and Montreal Canada.

American Airlines, Inc. operates between Toronto Canada, and New York/Newark, via Buffalo, U.S.A.

British Overseas Airways Corp. operates between London England, Manchester England, Prestwick Scotland, Shannon Ireland, Gander Canada, Montreal Canada, and Toronto Canada; and between London England, Montreal Canada, and Bermuda, the Bahamas and Jamaica.

Eastern Air Lines, Inc. operates between the terminals Ottawa Canada and Montreal Canada, and New York U.S.A., direct or via Burlington Vt., U.S.A.; and between the terminals Ottawa Canada and Montreal Canada, and Washington U.S.A., direct or via Massena and/or Syracuse, N.Y., U.S.A.

K.L.M. Royal Dutch Airlines operates between Amsterdam the Netherlands, and Montreal Canada.

Lufthansa German Airlines operates between Hamburg Germany and other points abroad, Montreal Canada and Chicago U.S.A.

North Central Airlines, Inc. operates between Duluth, Minn./Superior, Wis., Hancock/Houghton, Mich., U.S.A., and Port Arthur/Fort William Canada.

Northeast Airlines, Inc. operates between Montreal Canada, and Boston U.S.A., via Burlington, Vt., Montpelier-Barre, Vt., White River Junction, Vt. (Lebanon Airport, N.H.), and Concord, N.H., U.S.A.

Northwest Airlines, Inc. operates between Winnipeg Canada, and Fargo, N.D., U.S.A.; and between Minneapolis/St. Paul U.S.A., Edmonton Canada, Anchorage Alaska, and beyond.

Pan American World Airways Inc. operates between Seattle, Wash., and Fairbanks, Alaska, U.S.A. with points of call at Juneau and Annette Island, Alaska, and Whitehorse, Y.T., Canada; and between points in the United States, Gander Canada, and Europe.

Qantas Empire Airways Ltd. operates between Sydney Australia, San Francisco U.S.A.; and Vancouver Canada.

Sabena Belgian World Airlines operates between Brussels Belgium, Shannon Ireland, and Montreal Canada.

Seaboard and Western Airlines, Inc. operates between points in the United States, Gander Canada, and beyond.

TWA (Trans-World Airlines, Inc.) operates between points in the United States, Gander Canada, and points abroad.

United Air Lines, Inc. operates between Vancouver Canada, and Seattle U.S.A., via Bellingham U.S.A.

West Coast Airlines, Inc. operates between Spokane U.S.A., and Calgary Canada.

Western Air Lines, Inc. operates between Great Falls, Mont., U.S.A., Calgary Canada and Edmonton Canada.

Section 3.—Civil Aviation Statistics

Ground Facilities.*—Aircraft landing areas in Canada are classified in Table **3** by administrative agency, as licensed or unlicensed land facilities or seaplane bases, and military air fields. The unlicensed aerodromes and seaplane bases shown are kept in varying degrees of readiness but lack one or more of the facilities usually found in licensed airports, such as lights, customs offices, passenger accommodation, ground/air communication, etc. Associated with these facilities is a network of radio aids to navigation designed to facilitate en route navigation and safe landings under low visibility conditions.

The Department of Transport operates 97 low frequency radio ranges, 36 VHF omni-directional ranges, 108 non-directional radio beacons and 36 instrument landing systems. These facilities are calibrated and flight-checked by Civil Aviation Inspectors on a regular schedule. Ten additional VHF omni-directional ranges are under construction.

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* Compiled from information provided by the Civil Aviation Branch, Air Services, Department of Transport, Ottawa.

3.—Aircraft Landing Areas classified by Type of Facility and Operator, by Province, as at February 1961

Type of Facility and Operator	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	N.W.T.	Yukon	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Licensed Airports (Land)—													
Department of Transport	1	1	3	2	8	17	3	4	6	19	10	4	78
Municipal	—	—	—	1	13	16	5	12	11	16	—	2	76
Private	—	2	2	2	18	36	2	12	14	2	—	—	90
Unlicensed Aerodromes—													
Department of Transport	1	—	—	—	3	15	2	2	—	9	3	4	39
Municipal	4	—	1	1	9	2	—	23	6	13	—	2	61
Private	4	—	10	10	26	14	33	115	24	36	6	3	281
Abandoned or unknown	2	—	—	—	16	1	—	2	2	32	1	4	60
Licensed Seaplane Bases—													
Department of Transport	—	—	—	—	—	—	—	—	—	2	—	—	2
Municipal	—	—	—	—	—	1	—	1	1	10	1	1	15
Private	5	1	2	—	46	95	31	9	3	23	15	2	232
Unlicensed Seaplane Bases—													
Department of Transport	—	—	—	—	—	—	—	—	1	17	1	—	19
Municipal	—	—	—	—	—	—	1	1	—	—	—	—	2
Private	4	—	2	1	17	22	12	5	5	18	19	1	106
Abandoned or unknown	12	1	9	5	27	13	10	10	4	32	17	6	146
Military Airfields—													
RCAF	3	1	2	2	5	16	7	3	8	—	24	1	72
Army	—	—	—	—	—	—	—	—	2	—	—	—	2
RCN	—	—	2	—	—	—	—	—	—	—	—	—	2
U.S. Navy	2	—	—	—	—	—	—	—	—	—	1	—	3
U.S. Air Force	2	—	—	—	—	—	1	—	—	1	—	—	4
Totals, Land Bases	**12**	**3**	**16**	**16**	**93**	**101**	**45**	**170**	**63**	**127**	**20**	**19**	**685**
Totals, Seaplane Bases	**21**	**2**	**13**	**6**	**90**	**131**	**54**	**26**	**14**	**102**	**53**	**10**	**522**
Totals, Military Airfields	**7**	**1**	**4**	**2**	**5**	**16**	**8**	**3**	**10**	**1**	**25**	**1**	**83**
Grand Totals	**40**	**6**	**33**	**24**	**188**	**248**	**107**	**199**	**87**	**230**	**98**	**30**	**1,290**

Air Traffic Control.—The primary functions of the Air Traffic Control Division of the Department of Transport are to expedite and maintain an orderly flow of air traffic and to prevent collision between aircraft operating within controlled air space, and between aircraft and obstructions on the movement area of controlled airports. This is accomplished through airport control, terminal control and area control services, together with flight information, alerting for search and rescue, customs notification and aircraft identification. These services are described below.

Airport Control is designed particularly to provide air traffic control service in the vicinity of major civil airports where the volume and type of aircraft operations, weather conditions and other factors indicate its need in the interests of safety. The service includes the control of pedestrians and vehicles on the manoeuvring area of the airport. Control is effected by means of direct radiotelephone communication or visual signals to aircraft and surface vehicles on and in the vicinity of controlled airports. The control towers are located at Whitehorse, Y.T., Victoria (International), Port Hardy and Vancouver, B.C.; Lethbridge, Calgary, Edmonton (Municipal) and Edmonton (International), Alta.; Saskatoon and Regina, Sask.; Winnipeg (International), Man.; Lakehead, Windsor, London, Toronto Island, Toronto (International), Ottawa and North Bay, Ont.; Montreal (International), Cartierville, Quebec, Val d'Or, Baie Comeau and Sept Îles, Que.; Moncton, Fredericton and Saint John, N.B.; Halifax (International) and Sydney, N.S.; Gander, Nfld.; and Frobisher, N.W.T. Most of the control towers are in continuous operation but a few provide 16-hour daily service only.

Terminal Control service consists of the provision of standard IFR separation to aircraft operating in accordance with Instrument Flight Rules within the local terminal control area, (which is generally within a 30-mile to 40-mile radius of the airport). Such service is provided by approach control units at Vancouver, B.C.; Edmonton and Calgary, Alta.; Saskatoon and Regina, Sask.; Winnipeg, Man.; the Lakehead, Toronto, Ottawa and North Bay, Ont.; Quebec and Montreal, Que.; Halifax (International), N.S.; Gander, Nfld.; and Frobisher, N.W.T.

Area Control is designed particularly to provide air traffic control service to aircraft operating within controlled airspace during weather conditions which prevent a pilot from seeing other aircraft or obstructions and necessitate his reliance on instruments to conduct the flight. Control centres are located at Vancouver, B.C.; Edmonton, Alta.; Winnipeg, Man.; Toronto, Ont.; Montreal, Que.; Moncton, N.B.; and Goose Bay and Gander, Nfld. Each centre is connected with the control towers, radio range stations and operations offices within its area by means of an extensive system of local and long-line interphone or radio circuits, and through the radio communication facilities available at these offices to all aircraft requiring area control service. Each area control centre is similarly connected with the adjacent centres, including centres in the United States, for the purpose of co-ordinating the control of aircraft operating through more than one control area. This communications system permits each centre to maintain a continuous detailed record of the movements of all aircraft operating in accordance with the Instrument Flight Rules, and a general record of the movements of all aircraft operating in accordance with the Visual Flight Rules within its control area. In addition to providing area control service to aircraft operating within the controlled airspace over Newfoundland, the Goose Bay and Gander control centres provide this service within the airspace over approximately one-half of the North Atlantic Ocean. The Vancouver area control centre also provides control service over the Pacific Ocean within the Vancouver Oceanic Control Area. Area control service is provided for approximately 16,000 miles of airways and control channels.

Radar Service aids in the control of both terminal and en route IFR traffic at certain locations. Radar terminal service is provided by the following terminal control units: Vancouver, B.C.; Calgary, Alta.; Saskatoon, Sask.; Regina, Sask.; Winnipeg (International), Man.; Toronto (International) and Ottawa, Ont.; Quebec and Montreal (International), Que.; Moncton, N.B.; Halifax (International), N.S.; Gander, Nfld. En route radar control service is being provided by the Winnipeg, Montreal, Gander and Goose area control centres.

Flight Information provides advice and information useful for the safe and efficient conduct of flight, including weather reports and forecasts, field condition reports, data concerning aids to navigation, traffic information, refuelling and transportation facilities and other related data of assistance to the pilot in planning or conducting a flight. Such service is provided by all air traffic control units but particularly by the eight area control centres.

Alerting for Search and Rescue is designed to ensure that the appropriate organizations are notified of aircraft in need of search and rescue aid and otherwise to assist such organizations promptly of non-arrival at destination of any aircraft for which a flight plan or flight notification has been received. This requires the maintenance and constant supervision of a continuous record of active flights to ensure that non-arrival of any aircraft is detected immediately. The service is available to any pilot who files either a flight plan or a flight notification with any communications agency of the Air Services of the Department or directly with one of the area control centres or control towers.

Customs Notification Service facilitates the routine notification of the appropriate customs agency by pilots who plan to cross the Canada–United States boundary. The Air Traffic Control communications system and units concerned therewith forward pilot requests to notify the customs officer at the airport of destination.

Aircraft Movement Information Service is provided by area control centres to assist the Department of National Defence in establishing the identification of all aircraft operating within specified areas.

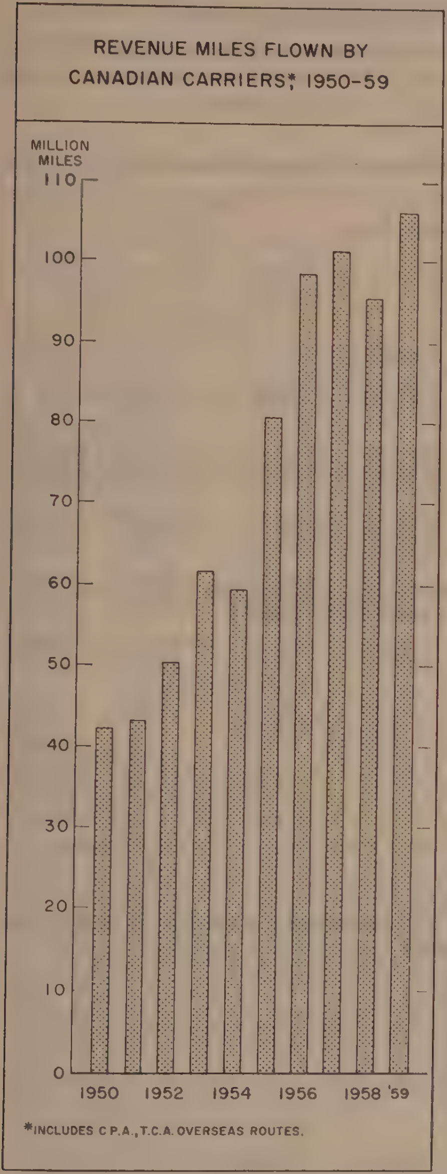
The number of controlled operations in Canada during 1960 was 2,823,470.

Operation Statistics.—The statistics given in Table 4 show the volume of passenger, freight and mail traffic.

4.—Summary Statistics of Civil Aviation, 1956-59

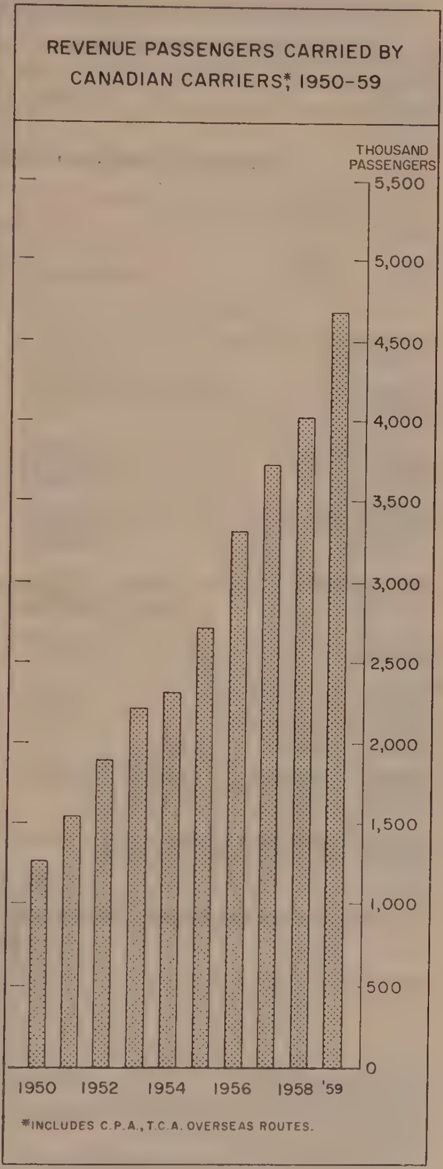
NOTE.—Figures include operations of Canadian international carriers and Canadian operations of foreign carriers.

Item		1956	1957	1958	1959
Aircraft-Miles Flown—					
Revenue	No.	101,723,710	104,699,140	99,858,279	110,889,252
Non-revenue	"	..	..	..	..
Totals	No.	101,723,710	104,699,140	99,858,279	110,889,252
Passengers Carried—					
Revenue	No.	3,864,818	4,319,920	4,555,251	5,316,001
Non-revenue	"	58,721	35,554	23,317	32,031
Totals	No.	3,923,539	4,355,474	4,578,568	5,348,032
Passenger-Miles—					
Revenue	No.	1,547,279,882	1,835,183,870	2,142,276,186	2,495,682,456
Non-revenue	"	61,416,920	71,030,597	86,663,863	102,753,571
Totals	No.	1,608,696,802	1,906,214,467	2,228,940,049	2,598,436,027
Freight Carried—					
Revenue	lb.	319,260,401	264,812,177	200,388,312	214,391,889
Non-revenue	"	7,639,517	7,079,240	6,462,608	9,140,907
Totals	lb.	326,899,918	271,891,417	206,850,920	223,532,796
Freight Ton-Miles—					
Revenue	No.	22,065,286	24,267,406	26,447,626	31,296,521
Non-revenue	"	3,039,907	2,998,061	3,433,553	4,472,346
Totals	No.	25,105,193	27,265,467	29,881,179	35,768,867
Mail carried	lb.	27,914,288	31,413,504	33,628,013	35,558,226
Mail ton-miles	No.	10,238,458	12,021,927	13,037,645	13,702,638
Hours Flown by Aircraft—					
Transportation revenue	No.	646,902	628,785	573,750	643,505
Transportation non-revenue	"	37,567	40,760	35,458	31,711
Patrols, surveys, etc.	"	87,920	113,271	135,587	155,022
Totals	No.	772,389	782,816	744,795	830,238
Gasoline consumption	gal.	102,836,140	112,769,672	128,051,496	150,178,054
Lubricating oil consumption	"	1,212,361	1,220,680	1,169,636	1,168,174
Licensed civil airports (all types)	No.	519	550	452	456
Licensed civil aircraft (all types)	No.	3,217	4,005[r]	4,509	4,857
Licensed Civil Air Personnel—					
Commercial pilots	No.	2,145	2,411	2,548	2,338
Senior commercial	"	380	399	423	407
Airline transport	"	831	968	1,069	1,179
Glider pilots	"	246	287	304	376
Private pilots	"	6,580	7,832	9,043	10,596
Air navigators	"	77	101	108	104
Air traffic controllers	"	416	565	631	722
Flight engineers	"	33	43	49	54
Aircraft maintenance engineers	"	1,747	1,916	2,043	1,863



REVENUE MILES FLOWN BY CANADIAN CARRIERS* 1950-59

*INCLUDES C.P.A., T.C.A. OVERSEAS ROUTES.



REVENUE PASSENGERS CARRIED BY CANADIAN CARRIERS* 1950-59

*INCLUDES C.P.A., T.C.A. OVERSEAS ROUTES.

Table **5** shows civil aviation figures for 1959 by type of service. A definition of scheduled and non-scheduled carriers is given on p. 836. Statistics for international carriers include traffic over Canadian territory for both Canadian and foreign operators; a small amount of traffic across Canadian territory and between foreign stations is also included.

It is interesting to note that of the total revenue passengers carried in 1959, 58 p.c. travelled on scheduled domestic flights of Canadian carriers and 20 p.c. on international flights of Canadian carriers. On the other hand, 63 p.c. of the revenue freight carried during the year was transported by non-scheduled Canadian carriers.

5.—Summary Statistics of Civil Aviation, by Type of Service, 1959

Item		Canadian Carriers			Foreign International	Total
		International[1]	Scheduled	Non-scheduled and Other		
Aircraft-Miles Flown—revenue transportation	No.	25,404,178	52,900,520	27,802,405	4,782,149	110,889,252
Passengers Carried	No.	1,088,359	3,080,882	533,261	645,530	5,348,032
Revenue	"	1,084,282	3,071,074	525,908	634,737	5,316,001
Non-revenue	"	4,077	9,808	7,353	10,793	32,031
Passenger-Miles[2]	No.	951,373,159	1,487,304,216	18,901,641	140,857,011	2,598,436,027
Revenue	"	908,235,479	1,431,048,316	18,102,625	138,296,036	2,495,682,456
Non-revenue	"	43,137,680	56,255,900	799,016	2,560,975	102,753,571
Freight Carried[3]	lb.	13,918,762	50,968,527	121,214,523	12,080,824	198,182,636
Revenue	"	12,802,188	46,106,255	118,729,759	11,403,527	189,041,729
Non-revenue	"	1,116,574	4,862,272	2,484,764	677,297	9,140,907
Freight Ton-Miles	No.	10,789,483	14,275,675	2,054,233	1,975,781	29,095,172
Revenue	"	8,974,253	11,969,866	1,887,450	1,791,257	24,622,826
Non-revenue	"	1,815,230	2,305,809	166,783	184,524	4,472,346
Mail carried	lb.	3,472,281	27,722,405	1,700,093	2,663,447	35,558,226
Mail ton-miles	No.	3,271,450	9,623,549	220,588	587,051	13,702,638
Hours Flown by Aircraft	No.	102,706	263,748	429,399	34,385	830,238
Transportation revenue	"	100,090	250,762	258,355	34,298	643,505
Transportation non-revenue	"	2,616	9,632	19,376	87	31,711
Patrols, surveys, etc.	"	—	3,354	151,668	—	155,022
Gasoline consumption	gal.	26,536,226	84,313,774	11,205,240	28,122,814	150,178,054
Lubricating oil consumption	"	293,038	442,822	153,563	278,751	1,168,174

[1] Includes trans-border services. [2] Exclusive of charter service, figures for which are not available.
[3] Includes freight, excess baggage and express.

6.—Capital Investment of the Department of Transport in Air Services, as at Mar. 31, 1958-60

Item	1958	1959	1960	Total as at Mar. 31 1960
	$	$	$	$
Civil Aviation Branch—				
Airports and other Ground Services—Construction Services -				
Capital appropriations	34,988,738	53,170,767	52,467,712	414,225,852
Transferred from other government departments	310,179	6,578,383	—	
Transferred to other government departments	—	—	—	
Transferred to Crown Assets Disposal Corporation	Cr. 805,401	Cr. 1,710,114	Cr. 1,851,007	
Property retired, etc.	Cr. 6,770,503	Cr. 2,617,955	Cr. 295,740	
Telecommunications and Electronics Branch—				
Radio Aids to Air and Marine Navigation—				
Capital appropriations	9,234,880	10,979,104	9,998,792	66,115,297
Property transferred to Crown Assets Disposal Corporation	—	Cr. 82,600	Cr. 17,560	
Property retired, etc.	Cr. 206,550	Cr. 43,058	Cr. 43,147	

6.—Capital Investment of the Department of Transport in Air Services, as at Mar. 31, 1958-60—concluded

Item	1958	1959	1960	Total as at Mar. 31, 1960
	$	$	$	$
Telecommunications and Electronics Branch— concluded				
Radio Act and Regulations—				
Capital appropriations	633,954	378,767	389,381	2,769,049
Property retired, etc.	—	Cr. 73,786	—	
Telegraph and Telephone Service—				
Capital appropriations	—	—	3,771,237	3,771,237
Northwest Communication System—				
Capital appropriations	1,406,965	Cr. 48,321	—	—
Property transferred to Crown Assets Disposal Corporation	Cr. 38,233	—	—	
Property retired, etc.	Cr. 120,988	—	—	
Transferred to Canadian Government Railways	—	Cr. 17,833,076	—	
Meteorological Branch—				
Capital appropriations	550,965	673,070	1,248,648	9,347,176
Transferred from other government departments	57,553	22,297	75,054	
Property retired, etc.	Cr. 244,233	—	—	
Totals	**38,997,326**	**49,393,478**	**65,743,370**	**496,228,611**

7.—Expenditure and Revenue of the Department of Transport in connection with Air Services, Years Ended Mar. 31, 1958-60

Item	1958	1959	1960
	$	$	$
Expenditure			
Air Transport Board	**291,236**	**335,943**	**375,166**
Air Services	**2,400,134**	**3,079,562**	**4,063,675**
General Administration	973,844	1,121,296	1,316,009
Construction Services Administration	1,426,290	1,958,266	2,747,666
Civil Aviation Branch	**18,128,201**	**21,609,808**	**24,963,651**
Control of Civil Aviation	1,412,433	1,628,972	2,254,026
Airports and other ground services—operation and maintenance	11,495,378	14,433,172	16,678,285
Airway and airport traffic control—operation and maintenance	4,023,263	4,474,805	5,126,621
Contributions to other governments or international agencies for the operation and maintenance of airports	228,110	231,669	246,439
Contributions to municipalities or public bodies for construction or improvements of airports on land acquired by such organizations	38,672	75,949	12,641
Contributions towards airport development and other airport projects on cost-sharing basis	428,145	231,059	85,929
Grants to organizations for development of civil aviation	502,200	529,800	559,710
Payment to B.C. airlines for loss sustained in providing winter services to west coast communities Jan. 1 to Mar. 31, 1958	—	4,382	—
Telecommunications and Electronics Branch	**13,487,545**	**16,518,880**	**18,448,097**
Radio aids to air and marine navigation—administration, operation and maintenance	11,185,321	14,028,182	15,833,875
Radio Act and Regulations—administration, operation and maintenance	2,061,772	2,235,237	2,403,875
Northwest Communication System—Adjustment—Stores Account	—	5,899	—
Telegraph and Telephone Service—administration, operation and maintenance	240,452	249,562	210,347
Meteorological Branch	**10,153,495**	**11,139,319**	**12,024,755**
Administration, operation and maintenance	10,153,495	11,139,319	12,017,700
Gift of furnishings to the headquarters of the World Meteorological Organization at Geneva, Switzerland	—	—	7,055
Totals, Expenditure	**44,460,611**	**52,683,512**	**59,875,344**

7.—Expenditure and Revenue of the Department of Transport in connection with Air Services, Years Ended Mar. 31, 1958-60—continued

Item	1958	1959	1960
	$	$	$
Revenue and Receipts			
Air Services Administration	**3,443**	**7,058**	**5,054**
Construction Branch Administration	—	—	**2,309**
Civil Aviation Branch	**7,020,406**	**8,759,130**	**9,457,898**
Private air pilots' certificates	23,817	22,928	23,676
Airport licence fees	401	571	671
Aircraft registration certificates	7,985	9,516	10,451
Airworthiness certificates	3,015	3,369	3,307
Aircraft earnings	6,748	—	—
Fines, Aeronautics Act	5,362	6,936	2,775
Miscellaneous	644	176	89
Land rental	104,347	191,084	297,091
Rentals—			
Living quarters	307,296	412,673	437,730
Public address system	1,209	2,441	3,264
Hangar	237,219	220,403	211,196
Office, shop and garage space	512,362	542,415	649,961
Equipment	19,859	50,342	10,215
Restaurant and snack bars	46,714	40,725	79,955
Miscellaneous	62,156	52,093	33,965
Concessions—			
Gasoline and oil	844,430	1,054,779	1,164,365
Taxi	65,663	74,555	81,071
Restaurant and snack bars	27,428	56,300	68,368
Telephone	14,900	16,282	20,247
Car parking areas	151,073	193,229	273,442
Car rentals	41,832	58,344	79,231
Miscellaneous	73,378	137,672	180,715
Aircraft landing fees	3,422,100	4,564,357	4,645,709
Aircraft parking and handling	61,821	67,580	55,304
Power services	102,416	134,924	133,796
Mess receipts	48,347	79,563	54,892
Telephone service	23,544	20,726	27,928
Observation roof—turnstiles	38,275	47,750	55,230
Warehousing	19,228	9,300	16,334
Hangar storage space	116,414	88,189	97,712
Hangar heating	19,706	11,333	17,486
Sales—			
Water	46,772	54,587	52,152
Land and buildings	52,962	6,035	8,767
Miscellaneous	4,456	4,996	5,022
Car parking meters	—	—	17,520
Gander Airport—			
Coal sales	19,786	17,403	15,125
Heating	96,245	48,864	21,394
Electricity	184,500	153,066	49,096
Recoverable services	28,803	30,274	24,162
Sanitary fees	2,115	5,932	23,236
Miscellaneous	6,268	4,462	—
Net profit commercial caterers	—	11,909	—
Interest on investment	—	—	10,700
Air route facilities fees	—	—	28,608
Air Traffic Control Division	10,528	10,498	10,493
Sundry services	69,087	85,361	185,786
Sundries	16,176	58,910	18,128
Refunds, previous year's expenditure	73,019	96,278	251,533
Telecommunications and Electronics Branch	**2,764,061**	**2,060,969**	**2,860,981**
Air-ground radio services	522,817	842,468	891,480
Radio operators' examination fees	3,680	5,710	5,486
Radio Station Licences—			
Aircraft station	28,808	—	—
Amateur experimental station	26,816	—	—
Commercial broadcasting receiving station	5,462	—	—
Commercial receiving station	331	—	—
Experimental station	1,751	—	—
Limited coast station	1,000	—	—
Municipal police private commercial station	705	—	—
Private commercial station	213,862	—	—
Public commercial station	42,225	—	—
Ship station	59,100	271,458	839,957
Technical and training school station	85	—	—

7.—Expenditure and Revenue of the Department of Transport in connection with Air Services, Years Ended Mar. 31, 1958-60—concluded

Item	1958	1959	1960
	$	$	$
Revenue and Receipts—concluded			
Telecommunications and Electronics Branch—concluded			
Sales—	8,000	43,590	120,340
Land and buildings	2,166	1,424	2,818
Power services	2,994	4,068	3,000
Transport publications	144	250	1
Miscellaneous	26	29	1,262
Fines and forfeitures	282,459	480,788	425,227
Message tolls	—	—	39,976
Telephone service	—	—	2,093
Communication facilities			
Rentals—	235,806	285,890	367,675
Living quarters	31,369	30,610	54,704
Space control lines and power	—	—	3,586
Public address system	5,227	6,477	1,113
Miscellaneous	66,272	57,136	26,505
Government telegraph and telephone tolls	18,900	—	—
Sale of British Columbia facilities	912	111	1,083
Mess receipts	10,855	354	2,073
Miscellaneous	869,191	1,570	—
Northwest Communication System	323,098	29,036	72,602
Refunds, previous year's expenditure			
Meteorological Branch	**120,266**	**147,940**	**176,753**
Rentals—	53,395	95,859	120,416
Living quarters	—	5,691	4,457
Office, shop and garage space	5,491	198	2,435
Miscellaneous			
Sales—	2,974	1,275	4,053
Transport publications	—	150	850
Land and buildings			
Radio commercial message tolls—D.O.T. operated stations	1,158	2,486	720
Communication facilities	3,472	322	324
Power service	1,913	3,094	3,125
Mess receipts	—	1,755	1,181
Sundry services	—	4,447	15,774
Sundries	6,031	1,084	4,071
Refunds, previous year's expenditure	45,832	31,579	19,347
Totals, Revenue and Receipts	**9,908,176**	**10,975,097**	**12,502,995**

No statistics are available regarding total expenditure on flying operations by the federal and provincial governments or by private individuals, but capital expenditure by commercial air carriers for property as reported for the end of 1958 and 1959 is shown in Table 8.

8.—Cost of Property, Revenue and Expenditure for Scheduled and Other Commercial Air Carriers, 1958 and 1959

Item	1958			1959		
	Scheduled[1]	Other	Total	Scheduled[1]	Other	Total
	$	$	$	$	$	$
Cost of Property	**126,953,406**	**14,964,918**	**141,918,324**	**97,872,524**	**14,146,068**	**112,018,592**
Aircraft	84,053,955	8,472,465	92,526,420	63,007,088	8,146,676	71,153,764
Aircraft engines	19,613,121	1,406,953	21,020,074	14,377,464	1,439,452	15,816,916
Buildings and improvements	10,651,886	3,205,827	13,857,713	9,160,877	2,955,203	12,116,080
Miscellaneous	12,634,444	1,879,673	14,514,117	11,327,095	1,604,737	12,931,832
Revenue and Expenditure—						
Revenue	164,855,749	36,858,187	201,713,936	185,484,920	34,938,638	220,423,558
Expenditure	164,819,252	35,458,973	200,278,225	186,536,509	32,951,484	219,487,993

[1] Includes Canadian trans-border, transatlantic and transpacific services.

Employees and Salaries and Wages.—The numbers of civil air personnel licensed in recent years are shown in Table **4**, p. 842. However, the figures in Table **9** include pilots and engineers in the employ of the Federal Government and of private individuals as well as those not employed at all in the ordinary sense.

9.—Employees and Salaries and Wages in Civil Aviation, 1958 and 1959

Year and Class of Employee	Scheduled		Non-scheduled		Totals	
	Employees	Salaries and Wages	Employees	Salaries and Wages	Employees	Salaries and Wages
	No.	$	No.	$	No.	$
1958						
General officers	926	7,285,884	148	1,180,004	1,074	8,465,888
Clerks	1,801	6,275,958	230	892,594	2,031	7,168,552
Pilots	960	10,126,764	625	3,999,870	1,585	14,126,634
Co-pilots	157	1,167,680	50	359,210	207	1,526,890
Despatchers	139	784,636	44	200,358	183	984,994
Communication operators	800	2,969,762	32	119,301	832	3,089,063
Stewards or other attendants	806	3,121,070	13	43,456	819	3,164,526
Air engineers	691	4,197,989	278	1,558,145	969	5,756,134
Mechanics	2,581	12,627,066	439	1,708,395	3,020	14,335,461
Airport employees	2,241	9,284,138	107	280,496	2,348	9,564,634
Stores employees	355	1,362,033	76	222,861	431	1,584,894
Other employees	2,123	9,284,135	368	1,183,340	2,491	10,467,475
Totals, 1958	**13,580**	**68,487,115**	**2,410**	**11,748,030**	**15,990**	**80,235,145**
1959						
General officers	957	8,088,893	145	1,189,758	1,102	9,278,651
Clerks	1,978	7,118,839	189	625,521	2,167	7,744,360
Pilots	975	10,711,975	637	4,028,589	1,612	14,740,564
Co-pilots	177	1,363,752	60	539,627	237	1,903,379
Despatchers	135	828,478	72	332,166	207	1,160,644
Communication operators	393	1,457,047	34	137,371	427	1,594,418
Stewards or other attendants	911	3,673,445	18	60,023	929	3,733,468
Air engineers	683	4,344,932	307	1,636,273	990	5,981,205
Mechanics	2,601	13,391,351	450	1,740,926	3,051	15,132,277
Airport employees	2,469	10,333,427	117	292,061	2,586	10,625,488
Stores employees	349	1,400,823	61	223,012	410	1,623,835
Other employees	2,688	12,095,944	159	534,207	2,847	12,630,151
Totals, 1959[1]	**14,316**	**74,808,906**	**2,249**	**11,339,534**	**16,565**	**86,148,440**

[1] Excludes employees of foreign carriers domiciled in Canada.

PART VI.—OIL AND GAS PIPELINES

A special article covering the history and development of pipeline construction in Canada appears in the 1954 Year Book at pp. 861-869. Additional information has been carried in each succeeding edition and the following Section brings pipeline development up to the end of 1960.

Section 1.—Pipeline Developments*

Oil Pipelines.—The rapid development of Canadian oil fields in the past dozen years has necessitated a corresponding growth of crude oil pipeline systems to gather the oil and transport it to market areas. Although there were small-diameter oil pipelines in Ontario in 1875 and in Alberta by 1925, almost the entire present pipeline system has been constructed since the discovery of oil at Leduc, Alta., in 1947.

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* Prepared under direction of Dr. Marc Boyer, Deputy Minister of Mines and Technical Surveys, in the Mineral Resources Division.

The oil pipeline network consists of two major components—the trunk line system of Interprovincial Pipe Line Company which delivers oil to Eastern Canada, and the trunk line system of Trans Mountain Oil Pipe Line Company which transports oil to the Pacific Coast. Numerous gathering systems and smaller trunk lines operate in Western Canada, transporting crude oil from oil fields to local refining centres and to the two major trunk line systems. Altogether there are more than 8,000 miles of trunk and gathering oil pipelines in Canada, as well as extensions to Canadian facilities in the United States which are used exclusively for carrying Canadian crude oil.

In 1960 there were no new oil pipeline construction projects undertaken in Canada but a number of additions were made to existing systems. In Alberta, Federated Pipe Lines Limited added 78 miles of loop to its line from the Swan Hills field to Edmonton and extended its system 32 miles in the Judy Creek and Virginia Hills fields. Pembina Pipeline Limited added 70 miles to its gathering system in the Pembina field. The new Simonette field was connected to the Peace River pipeline by 37 miles of eight-inch pipe. Northeastern British Columbia obtained its first oil pipeline when 30 miles of gathering line and a main line to the refinery near Fort St. John were built by Trans-Prairie Pipelines Limited. The line was also extended to Dawson Creek, B.C., to supply the small refinery there. At the end of 1960, plans were under way to provide a pipeline outlet to the Pacific Coast for northeastern British Columbia crude oil. In Saskatchewan, Producers Pipelines Limited added over 65 miles of extension to its gathering facilities in the southeastern part of the province.

As a result of negotiations between Canada and the United States, more than 570 miles of pipeline in the Yukon Territory, together with extensive storage facilities at Whitehorse, were purchased by Canada in March 1960. These lines were originally part of the Canol system constructed by the United States during World War II to supply fuel for naval operations in the Pacific. Source of the oil was Norman Wells, N.W.T., but the main line through the Mackenzie Mountains was dismantled as uneconomic in 1947. Another part of the system—the Canadian portion of the line between Whitehorse and Skagway on the Alaskan coast—was transferred to Canada in 1958. The remainder, consisting of petroleum products lines running along the Alaska Highway between the Alaska boundary and Whitehorse and between Carcross and Watson Lake, has now been transferred to Canadian ownership.

Interprovincial Pipeline.—Canada's longest oil pipeline, the system of Interprovincial Pipe Line Company, extends from the Redwater field, 25 miles northeast of Edmonton, to Port Credit near Toronto. This includes the line of its wholly owned subsidiary in the United States, the Lakehead Pipe Line Company Incorporated. The length of the route from the Redwater field to Port Credit is 1,934 miles. The system consists of two parallel lines from Edmonton to Superior, Wis., at the head of Lake Superior; a 30-inch line from Superior to Sarnia; and a 20-inch line from Sarnia to Port Credit. The capacity of the system is approximately 325,000 bbl. per day out of Edmonton, 428,000 bbl. per day out of Cromer, Man., and 333,500 bbl. per day out of Superior. Interprovincial takes deliveries from 12 pipeline companies in Alberta, Saskatchewan and Manitoba and serves 13 refineries in Canada and seven in the United States.

Trans Mountain Pipeline.—The Trans Mountain pipeline of 24-inch pipe was completed over a 719-mile route from Edmonton to Vancouver in 1953, enabling West Coast refineries to use Alberta crude oil in place of foreign crude brought in by tanker. Crude oil is transported to refineries at Ferndale and Anacortes in the State of Washington through extensions added to the Trans Mountain line in 1954 and 1955. The pumping capacity of the line is now 250,000 bbl. per day but for the past three years considerably less than half of this capacity has been utilized. Peak annual throughput was attained in 1957 when deliveries averaged 155,000 bbl. per day as a result of increased oil demand during the Suez crisis. In addition to taking deliveries at Edmonton, Trans Mountain receives crude at Edson, Alta., from the Peace River pipeline which serves the Sturgeon Lake, Kaybob and Simonette areas.

Other Pipelines.—The Federated pipeline connects the relatively new Swan Hills field with Edmonton. Deliveries were started in January 1959 and expansion of the system continued during 1960. The main line, of 10- and 12-inch pipe, is 123 miles long and, in addition, about 100 miles of lateral and gathering lines serve the Judy Creek, Judy Creek West and Virginia Hills fields. The Pembina pipeline system connects the large Pembina field to delivery points at Edmonton. The Britamoil Pipe Line Company operates a pipeline that originates 140 miles south of Edmonton in the Drumheller area and gathers crude from a number of fields en route to Edmonton. The Edmonton Pipe Line Company transports crude from the Camrose and Joarcam fields 40 miles south of Edmonton. The Imperial Pipe Line Company serves the Leduc–Woodbend, Acheson, Golden Spike and Redwater fields in the Edmonton area. The Rangeland Pipe Line Company gathers oil from the Sundre and Innisfail areas 60 miles north of Calgary. Texaco Exploration Company operates a pipeline that serves several fields southwest of Edmonton. In Saskatchewan, Producers Pipelines Limited and Westspur Pipe Line Company gather crude from most of the fields in the southeastern part of the province and carry it to the Interprovincial pipeline at Cromer, Man. Trans-Prairie Pipelines Limited has one system that serves the Weyburn field in southeastern Saskatchewan and a second system that serves fields in southwestern Manitoba.

Pipeline Tariffs.—Interprovincial Pipe Line Company reduced its tariff rate on crude oil transported from Edmonton to Sarnia and Toronto by six cents a barrel in 1960. There was no change in Trans Mountain pipeline tariffs. Some examples of tariffs for the two major systems follow.

Route	*Transmission Distance*	*Tariff*
	miles	cts. per bbl.
Edmonton, Alta.; to—		
Regina, Sask.	438	20
Superior, Wis., U.S.A.	1,074	37
Sarnia, Ont.	1,743	50
Port Credit, Ont.	1,899	54
Vancouver, B.C.	718	40
Ferndale, Wash., U.S.A.	740	42

Natural Gas Pipelines.—Although no large gas pipelines were constructed in 1960, it was an important year for Canadian gas producers as the National Energy Board granted permission to Canadian pipeline companies to export slightly more than 1,000,000 Mcf. per day to the United States and the United States Federal Power Commission gave permission for the importation of most of this gas. This led, during the latter part of the year, to a renewal of pipeline construction activity. Natural gas deliveries to California are expected to start by 1962 through a new Alberta-to-California pipeline which will have an initial capacity of 400,000 Mcf. per day. Parts of this system were under construction by the end of 1960.

The National Energy Board in 1960 granted export permits to the following companies:—

Alberta and Southern Gas Company Limited: 458,750 Mcf. per day for export at Kingsgate, B.C.
Westcoast Transmission Company Limited: 152,000 Mcf. per day for export at Kingsgate, B.C.
Canadian-Montana Pipe Line Company: 36,000 Mcf. per day for export near Cardston, Alta.
Trans-Canada Pipe Lines Limited: 204,000 Mcf. per day at Emerson, Man.
Trans-Canada Pipe Lines Limited: 204,000 Mcf. per day of interruptible gas at Niagara Falls, Ont.

Gas pipeline construction in 1960 was highlighted by the completion in October of a 30-inch pipeline by Trans-Canada Pipe Lines Limited from its main line at Winnipeg to the United States border at Emerson, Man., a distance of 51 miles. By the end of the year, communities in the Great Lakes region of the United States were being served with Canadian gas. About 800 miles of new gas pipeline were added to existing systems throughout Canada in 1960, bringing the total length of gathering, transmission and distribution lines to about 31,200 miles.

Trans-Canada Pipeline and Connecting Pipelines.—Trans-Canada is North America's longest pipeline and is the only means of delivering Western Canada's natural gas to Ontario and Quebec. The total length of line, including the new branch to the United States–Manitoba border, is 2,340 miles. Unlike the corresponding west-to-east crude oil pipeline which runs south of the Great Lakes, the Trans-Canada gas pipeline remains wholly within Canadian territory. The main portion of the system was completed in October 1958. It is comprised of 34-inch pipe from the Alberta–Saskatchewan border to Winnipeg, 30-inch pipe from Winnipeg to Toronto, and 20-inch pipe from Toronto to Montreal. There are also two laterals in the Toronto–Niagara Falls area and a 12-inch lateral to Ottawa.

Westcoast Transmission Pipeline and Connecting Pipelines.—The Westcoast line transports gas to the Vancouver area from the Peace River region of northeastern British Columbia and northwestern Alberta. The main trunk consists of 650 miles of 30-inch pipe starting at Taylor, B.C. There are about 300 miles of gathering lines connecting the Fort St. John, Buick Creek West, Blueberry, Stoddart, Kiskatimaw and Pouce Coupe fields, all in British Columbia, to the terminal at Taylor. The Westcoast line delivers gas to Inland Natural Gas Company Limited and British Columbia Electric Company in central and southern British Columbia and to Pacific Northwest Pipeline Corporation in the United States. Inland serves the towns of Kamloops, Vernon, Kelowna, Penticton, Trail and Nelson. British Columbia Electric serves the greater Vancouver area.

Alberta Gas Trunk Line Company.—This Company's pipeline system gathers gas in Alberta and delivers it to the Trans-Canada pipeline at the Alberta–Saskatchewan border. It consists of about 800 miles of line ranging from 34-inch down to 4-inch. In 1960, 183 miles of line were laid to take gas from several fields including the Homeglen–Rimbey, Cessford and Gilby fields. The Alberta Gas Trunk system is also designed to supply Alberta's gas utilities at a high load factor.

Saskatchewan Power Corporation.—This Corporation delivers gas to all cities and towns in Saskatchewan and serves altogether more than 70 urban communities. Much of the Corporation's gas is gathered in the Coleville–Smiley, Milton–Hoosier, Success–Cantuar and Hatton fields in the western part of Saskatchewan and from the Steelman field in the southeast corner of the province. In 1960, over 200 miles of gas pipeline were added to the network.

Other Gas Pipelines.—In Manitoba, the Greater Winnipeg Gas Company, with about 350 miles of lines, distributes natural gas to the Winnipeg area. In Ontario, Union Gas Company of Canada Limited serves most of southwestern Ontario, including Windsor, London, Sarnia and Chatham; it gathers gas from most of the small fields of southwestern Ontario. Consumers Gas Limited distributes gas in the Toronto, Ottawa, Niagara Falls, Welland and Fort Erie regions. Northern Ontario Natural Gas Limited and Twin City Gas Company distribute gas to various communities in northwestern Ontario from Fort William eastward to Orillia, including Sudbury. In Quebec, gas is distributed by Quebec Natural Gas Limited in the Montreal area. All of these systems are supplied by the Trans-Canada pipeline which makes deliveries in Saskatchewan, Manitoba, Ontario and Quebec along its 2,340-mile route.

Section 2.—Pipeline Statistics

Oil Pipeline Statistics.*—There were 41 oil pipeline companies operating in Canada at the end of 1960. Pipeline deliveries shown in Table 1 were made to non-pipeline carriers, foreign pipelines, and terminals including refineries and distributing centres.

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* Statistics of oil pipelines are given in greater detail in the DBS monthly report *Oil Pipe Line Transport* (Catalogue No. 55-001). Additional information on the interprovincial movement of oil by pipeline will be found in Chapter XIX, Part I, Section 5.

1.—Oil Delivered by Pipeline, 1956-60

Destination	1956	1957	1958	1959	1960
	bbl.	bbl.	bbl.	bbl.	bbl.
Yukon Territory[1]	—	—	—	37,157	320,360
British Columbia	21,809,740	22,300,264	20,597,276	22,585,326	23,284,402
U.S. Pacific Northwest (at Sumas, B.C.)	19,211,435	27,329,940	8,968,639	13,271,836	18,125,927
West Coast offshore shipments	6,230,466	6,904,960	—	—	—
Alberta[2]	17,830,462	13,570,320	16,150,606	22,741,019	23.068,781
Saskatchewan	16,732,869	17,691,698	16,289,075	18,509,119	18,235,423
Manitoba	9,961,540	9,952,757	10,628,835	10,977,184	11,275,498
U.S. Midwest (at Gretna, Man.)	16,867,189	20,643,820	20,781,689	20,433,937	23,245,945
Ontario—crude oil	52,027,871[r]	52,382,052[r]	61,736,033[r]	71,558,611[r]	72,778,158
Ontario—refinery products	43,934,694[r]	44,760,797[r]	43,478,139[r]	45,858,662[r]	47,680,313
Quebec	76,758,440	81,428,930	78,547,073	84,371,790	79,170,088
Totals, Net Deliveries	**281,364,706**	**296,965,538**	**277,177,365**	**310,344,641**[r]	**317,184,895**

[1] Products of refineries. [2] Includes natural gasoline and other products.

Revenue and employee data shown in Table 2 are not complete; both revenue and employee figures have been omitted for three companies and employee figures for eight other companies, since pipeline operation forms only a part of the activities of these establishments and the data are not separable.

2.—Operating Statistics of Oil Pipelines, 1957-60

Item		1957	1958	1959	1960
Barrels Handled (gross daily average)—					
Gathering	No.	448,401	428,568	494,353	521,899
Trunk	"	1,140,146	1,098,341	1,228,194	1,285,928
Barrel miles (trunk lines)	'000,000	114,572	98,522	114,157[r]	119,316
Average miles per barrel (trunk lines)	No.	273	245	255	254
Average employees	"	1,722	1,653	1,559	1,549
Salaries and wages	$	9,541,372	9,321,821	9,351,295	9,638,912
Man-hours worked by wage-earners (including overtime)	No.	962,302	855,225	853,241	837,982
Operating revenues	$	87,719,710	76,621,901	86,897,575	93,002,123

Gas Pipeline Transport Statistics. The gas pipeline transport industry became a significant factor in the Canadian economy in 1957, with the completion of the first of several extensive pipelines constructed to transport natural gas from the field or processing plant to distribution outlets. The first detailed statistics for the industry cover the year 1959. Companies included are those that obtain the bulk of their revenue from the sale of gas to distribution companies for resale; those that derive most of their revenue from the sale of gas to final consumers are not included.

During 1960, Canadian transmission lines increased their net deliveries of natural gas by 32.8 p.c. to a total of 291,161,190 Mcf. from 219,279,021 Mcf. in 1959. Deliveries to distribution systems increased 31.3 p.c. and deliveries to foreign transmission lines 35.2 p.c. Much of the latter took place in the months of October, November and December after Trans-Canada Pipe Lines Limited commenced delivery to the mid-western United States. Deliveries averaged 795,522 Mcf. per day in 1960 compared with 600,764 Mcf. in 1959. Trans-Canada Pipe Lines accounted for 44.0 p.c. of the deliveries and Westcoast Transmission Company Limited for 37.3 p.c.

Receipts of natural gas were mainly from domestic sources—only 1.8 p.c. was imported. Imports were down to 5,476,580 Mcf. from the 1959 total of 11,634,172 Mcf., while gas received from gathering systems increased to 295,859,139 Mcf. from 210,967,454 Mcf.

Operating revenues increased 41.9 p.c. to $98,083,659 in 1960 from $69,124,365 in 1959.

3.—Natural Gas Transmission, 1959 and 1960

Item	1959	1960
	Mcf.	Mcf.
Natural Gas Received into System—		
From own gathering system	79,533,174	101,355,513
From other gathering systems	131,434,280	194,503,626
From foreign transmission lines	11,634,172	5,476,580
Totals, Net Receipts	**222,601,626**	**301,335,719**
From Canadian transmission lines	80,518,000	148,887,225
From storage	10,186,728	12,646,150
From distribution systems	4,791,947	6,292,123
Totals, Gross Receipts	**318,098,301**	**469,161,217**
Natural Gas Delivered out of System—		
To distribution systems	136,001,965	178,573,842
To foreign transmission lines	83,175,601	112,480,760
To industrial consumers	99,971	105,378
To others	1,484	1,210
Totals, Net Deliveries	**219,279,021**	**291,161,190**
To Canadian transmission lines	80,518,000	148,887,225
To storage	10,812,260	16,850,422
Redelivered to distribution systems	3,190,280	6,274,357
Totals, Gross Deliveries	**313,799,561**	**463,173,194**

4.—Operating Statistics of Gas Pipelines, 1959 and 1960

Item		1959	1960
Daily average sendout	Mcf.	600,764	795,522
Gross receipts	"	318,098,301	469,161,217
Gross deliveries	"	313,799,561	463,173,194
Operating revenues	$	69,124,365	98,083,659
Pipeline milage	miles	4,408.1	..
Average number of employees	No.	1,164	..
Salaries and wages	$	6,525,451	..
Average annual earnings per employee	$	5,606	..

CHAPTER XVIII.—COMMUNICATIONS

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Communications media in Canada have been shaped to meet the needs of the country. Great networks of telephone, telegraph and radio services, inextricably bound together, provide adequate and efficient service which, in this era of electronic advancement, is under continual technological change and development. The familiar challenges of the country—its size, its topography, its climate, its small population—which have reared their heads in other areas of development, have had to be faced as well in the field of communications. That these have been overcome is evidenced by the fact that today Canada possesses communication facilities and services second to none in the world.

Section 1.—Telecommunications*

During the past half-century, Canada has experienced tremendous economic expansion. Population growth and the advance to new industrial frontiers have been matched by an upward surge in national productivity and general standard of living. Continuing development of Canada is dependent on both individual pioneering and the co-operative efforts of many industries and the telecommunications industry is filling a vital role in this drama of growth.

Business and industry have expanded and ventured into isolated areas assisted and promoted by Canadian telecommunications industries which have anticipated the needs of the future with vast programs of development in virgin territories. Technological development has been particularly important to the extension of telecommunications in Canada. To meet the demands placed upon it, the industry has constantly introduced newer and better equipment, tools and methods of operation. In the growth of urban centres, the development of rural communities and the pioneering of new territory, Canadian telecommunications agencies have constantly sought to provide the highest quality of service for the greatest number of people. The major railways, the hundreds of co-operating telephone companies, the radio and television companies and federal communications organizations work together with a common purpose, building networks of telecommunications from coast to coast. They provide such familiar services as telephone, telegraph, teletype, radio and television, and many other related means of communication; in addition, mutual co-operation has allowed them to satisfy a variety of defence needs.

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* Textual data in the introduction of this Section and in Subsection 2 were prepared by The Bell Telephone Company of Canada, Montreal. Statistical material of Subsection 2 and Subsection 3 was revised in the Public Finance and Transportation Division, Dominion Bureau of Statistics. Subsections 1 and 4 to 7 were revised in the Telecommunications and Electronics Branch of the Department of Transport, Ottawa.

Subsection 1.—Government Control over Telecommunications Agencies

Telephone and telegraph companies incorporated under the Federal Government are subject to the jurisdiction of the Board of Transport Commissioners in the matter of rates and practices under the provisions of the Railway Act (see pp. 776-777); other companies are responsible to provincial regulatory bodies. In addition, tolls charged to the public for radio communications service are subject to the provisions of the Regulations made under the Radio Act. Overseas cables landed in Canada are subject to the External Submarine Cable Regulations under the Telegraphs Act.

Except for those matters covered by the Broadcasting Act, radio communications in Canada are regulated under the Radio Act and Regulations which include control of any equipment liable to cause interference to radio or television reception (see also p. 866) and also under the Canada Shipping Act and Ship Radio Regulations. In addition, all radio communication matters are administered in accordance with the provisions of the International Telecommunication Convention and Radio Regulations annexed thereto and in accordance with such regional agreements as the Inter-American Telecommunications Convention and Inter-American Radio Agreement, and the North American Regional Broadcasting Agreement. (See also pp. 864-866.)

National radio broadcasting in Canada entered its present phase in 1936 when, with the passage of the Canadian Broadcasting Act, the Canadian Broadcasting Corporation replaced the Canadian Radio Broadcasting Commission. The Act gave the Corporation wide powers in the operation of the system and gave to the Minister of Transport the technical control of all broadcasting stations.

During 1958 the Government established a Board of Broadcast Governors and the Canadian Broadcasting Corporation Board of Governors was abolished. The Board of Broadcast Governors regulates the establishment and operation of networks of sound and television broadcasting stations, the activities of public and private broadcasting stations and the relationship between them, in the interest of providing a national broadcasting service of high standard, basically Canadian in content and character. While the Minister of Transport is the licensing authority under the Radio Act, the Broadcasting Act requires that the applications for broadcasting station licences or for any change in an existing broadcasting station be referred to the Board of Broadcast Governors for its recommendation before being dealt with by the Department.

Subsection 2.—Telephones

Alexander Graham Bell first transmitted human speech through electrically energized equipment in March 1876, and in August of the same year a one-way call from Brantford to Paris in Ontario marked the first successful long-distance test of the new invention. Soon after the instrument was perfected, telephone exchanges sprang up in many Canadian communities, sometimes two competing companies in one place. As a result, in April 1880 The Bell Telephone Company of Canada was established by Act of Parliament and authorized as the official agent for telephone service in thirty-two cities and towns across the country. However, it came to be recognized that, in the existing state of the industry, one company could scarcely develop and organize service over so wide a territory and separate companies were set up in British Columbia. The Bell Telephone withdrew from the Maritime Provinces in the 1880's and installations in the Prairie Provinces were sold to the respective provincial governments in 1908-09. The seven major telephone systems that developed across Canada worked together to establish long-distance service on a national basis and in 1931 they founded the Trans-Canada Telephone System, which now has eight full members including both shareholder-owned companies and provincial government systems. They are as follows:—

The Avalon Telephone Company Limited (joined in 1957)
Maritime Telegraph and Telephone Company Limited
The New Brunswick Telephone Company Limited
The Bell Telephone Company of Canada (serving Ontario and Quebec)
Manitoba Telephone System
Saskatchewan Government Telephones
Alberta Government Telephones
British Columbia Telephone Company.

These eight systems, together with the Island Telephone Company (P.E.I.), Québec Téléphone (lower St. Lawrence), Ontario Northland Communications and the Okanagan Telephone Company, comprise the Telephone Association of Canada. This organization was established to ensure general co-operation in telephone matters.

As already mentioned, the steadily rising demand for local and long-distance service has called not only for general expansion of Canadian telephone systems but for the constant introduction of modern facilities and services. A number of Canadian companies have developed what is called "Extended Area Service" in many of the communities they serve. This plan eliminates long-distance charges between the larger centres and their suburbs, or between two or more places with close community of interest.

As part of the transmission facilities needed to carry the great volume of long-distance traffic as well as network television programs, the members of the Trans-Canada Telephone System collaborated to build a microwave radio relay network spanning Canada from coast to coast. The longest such network in the world, it was placed in operation on July 1, 1958. It is maintained jointly, each system member being responsible for the section falling in its operating territory. This network, ultimately capable of carrying 2,400 long-distance conversations and two television programs at the same time, is steadily being expanded toward the limit of its capacity. In addition, extensions to the original network have been made, bringing long-distance telephone service and television programs to many more remote areas.

For several years operators have been dialing many long-distance calls direct to the wanted telephone. The modern switching system that makes this possible also permits customer dialing of long-distance calls. Known as Direct Distance Dialing, customer dialing of long-distance calls has been in effect for some time in several Canadian communities and more centres are being added to the list each year. A long-range international plan, developed by the telephone companies of Canada and the United States, eventually will allow practically every telephone-user in North America to dial direct to almost any other telephone on the Continent. Direct dialing, an added convenience for telephone customers, will allow Canadian telephone companies to handle economically the ever-growing volume of long-distance calls.

This volume of long-distance calls will be augmented by a new machine-to-machine communications method which uses the direct distance dialing switching network. Machine-to-machine communication on a large scale has been made possible by the Data-Phone—a device which, when associated with a telephone and a business machine such as a teletype, transmits information over long distances—information supplied by the business machine is converted by the Data-Phone into tone-signals which are carried over the long-distance network to the distant Data-Phone which, in turn, converts the signals into information acceptable to the associated business machine. It is expected that, within the next ten years, the volume of machine-to-machine communications will equal that of regular long-distance calls.

New optional services being actively planned and engineered will provide even more expansion and flexibility in the long-distance field. One of these services will extend a customer's flat-rate calling area just as far as he wants in Canada and, eventually, just as far as he wants on the Continent. The charge for this service will be based upon the extent of and the number of telephones within the area chosen. Another new service will permit a customer to rent a band of frequencies over which he may transmit the mixture of services—voice, teletype and data—that best suits the needs of his business. The rate for such a band of frequencies will be lower than that for the same number of facilities rented individually.

All-Number Calling—a telephone numbering plan which uses seven figures instead of two letters and five figures—was put into operation in many communities in Canada and the United States during 1961. This system is being introduced gradually to eliminate the potential problem of a shortage of usable exchange prefixes. On a continent-wide basis it will almost double the total of such exchange prefixes and will provide for more accurate dialing.

The northward extension of industry in Canada has, of course, required the northward expansion of telephone communications. The British Columbia Telephone Company operates a radio chain from Vancouver up the coast to Kitimat. Uranium City in northern Saskatchewan, located in a vast area of muskeg and swamp, is provided with communications through a radio network out of Prince Albert, Sask. In Manitoba, the radio-telephone service reaches out to a large number of isolated settlements and bush camps and provides communications for aircraft and for boats plying Lake Winnipeg. Goose Bay in Labrador and the Schefferville area of the Quebec-Labrador boundary are now in immediate telephone contact with the remainder of the world through a radio relay network operated out of Quebec City through Sept Îles. A branch of this system, built in 1959, extends long-distance service to the new mining settlement of Gagnon, Que. In the same year, Bell Telephone opened its farthest-north exchange at Frobisher Bay on Baffin Island.

The summer of 1961 marked the further expansion of northern communications with the inauguration of radio-telephone service for that great northern area between the Quebec coast of Hudson Bay and the Atlantic coast of Labrador. Radio facilities linked directly with the long-distance system permit communication from within this vast sparsely populated area to virtually anywhere within the civilized world. Focal point of the radio network is a base station located near Alma, Que. It serves all settlements desiring service wherever they may be located throughout the thousands of square miles which comprise this immense region. As additional requirements arise, either in established or new communities, radio-telephone service will be provided.

Numerous flexible services are provided by Canadian telephone companies for business and industry. Special conference circuits can be quickly arranged, enabling widely scattered business interests to discuss their affairs without the inconvenience and expense of travel. Telephoto and facsimile services provide photographic copy direct from the originator. Radio installations link the traveller with the regular telephone network, providing mobile service for such users as highway departments, trucking and construction firms, fire and ambulance services and police departments. Oil pipeline companies also use the service as part of their communications arrangements to maintain contact between central offices, storage tanks, pumping stations and control units.

There is a significant demand for efficient service combined with attractive telephone instruments. New styles of compact colour telephone sets were welcomed into thousands of Canadian homes during 1961, adding to the already-popular line of standard colour models. Business customers have been quick to accept the products of telephone research such as the Call Director, a telephone offering a flexible combination of dial telephone and push-button or dial intercommunication. Another new service, called Centrex, was also introduced in 1961. Designed for large customers, this is a centralized system for private branch exchange service which permits outside calls to be dialed straight through to an extension without being relayed at the switchboard, and provides for locating all the necessary switching equipment in the telephone exchange central office.

Telephone Statistics.—There were 2,605 telephone systems operating in Canada in 1959 compared with 2,619 in 1958. The number of co-operative systems in rural districts increased from 2,184 to 2,195 but the number of shareholder-owned companies decreased from 318 to 304. The largest of the stock companies, The Bell Telephone Company of Canada operating throughout the greater part of Ontario and Quebec, served 61 p.c. of all the telephones in Canada, and the British Columbia Telephone Company, also shareholder-owned, served 9 p.c. of the total.

The number of telephones in use in Canada has risen by 86 p.c. during the ten-year period 1950-59. At Dec. 31, 1959, there were 5,439,023 telephones in service compared with 5,118,293 in 1958 and 2,917,092 in 1950. The number of residential telephones and the number of business telephones increased by 8 and 6 p.c., respectively, during 1959. Rural telephones were up 1 p.c. and pay telephones 4 p.c. By the end of the year, 85 p.c. of all telephones in Canada were dial-operated as compared with 82 p.c. in 1958. Pole-line milage and wire milage continue to increase year after year.

1.—Milages of Pole Line and Wire and Number of Telephones in Use, 1950-59

Note.—Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

Year	Systems	Pole-Line Milage[1]	Milage of Wire	Telephones in Use					
				Business	Residential	Rural[2]	Public Pay	Total	Per 100 Population
	No.	miles	miles	No.	No.	No.	No.	No.	No.
1950	2,912	245,443	9,488,467	813,352	1,611,759	447,691	44,290	2,917,092	21.1
1951	2,904	249,638	10,330,751	864,015	1,735,355	467,171	47,225	3,113,766	22.2
1952	2,888	253,420	11,265,903	920,269	1,888,889	492,753	50,455	3,352,366	23.2
1953	2,793	257,059	12,307,070	988,489	2,053,944	513,061	50,913	3,606,407	24.4
1954	2,788	257,444	13,357,289	1,053,852	2,213,154	538,660	54,603	3,860,269	25.4
1955	2,739	259,784	14,758,160	1,132,436	2,408,959	552,838	57,445	4,151,678	26.6
1956	2,661	269,303	16,410,897	1,229,150	2,625,787	584,484	59,904	4,499,325	28.0
1957	2,637	274,334	18,161,444	1,304,514	2,852,875	609,343	60,403	4,827,135	29.1
1958	2,619	280,881	20,250,410	1,379,205	3,050,812	625,453	62,823	5,118,293	30.0
1959	2,605	285,285	22,791,129	1,460,142	3,281,147	632,651	65,083	5,439,023	31.2

[1] Includes underground conduits and buried cable.

[2] Includes telephones on rural exchange lines and urban exchange lines having more than four parties.

The density of telephones in the different provinces is influenced by the urbanization of the population and the number of telephones used for business purposes.

2.—Telephones in Use, by Province, 1959

Province or Territory	On Individual Lines		On 2- and 4-Party Lines		On Rural Lines		Public Pay Telephones
	Business	Residence	Business	Residence	Business	Residence	
	No.	No.	No.	No.	No.	No.	No.
Newfoundland	5,326	9,789	770	20,059	150	2,185	549
Prince Edward Island	1,821	3,992	99	3,123	317	4,712	112
Nova Scotia	14,014	60,538	517	26,136	1,933	25,632	2,249
New Brunswick	10,105	29,203	948	32,911	1,224	19,025	1,480
Quebec	127,962	465,853	7,152	323,521	14,767	111,562	23,569
Ontario	185,050	631,315	7,253[1]	558,696[1]	11,172[1]	193,002[1]	26,954
Manitoba	23,961	68,616	452	86,206	5,193	29,394	2,229
Saskatchewan	23,106	109,502	75	1,495	3,433	57,352	1,592
Alberta	48,615	194,771	4	134	1,193	29,600	2,078
British Columbia	58,354	32,362	301	213,227	4,100	116,600	4,265
Yukon	28	4	28	81	23	60	—
Northwest Territories	79	34	6	—	5	17	6
Canada	**498,421**	**1,605,979**	**17,605**	**1,265,589**	**43,510**	**589,141**	**65,083**

Province or Territory	Private Branch Exchange		Extensions		Mobile	Total	Telephones per 100 Population
	Business	Residence	Business	Residence			
	No.	No.	No.	No.	No.	No.	No.
Newfoundland	5,986	—	3,401	3,665	2	51,882	11.6
Prince Edward Island	1,090	—	896	1,159	—	17,321	17.0
Nova Scotia	14,253	—	8,544	12,384	429	166,629	23.3
New Brunswick	11,015	6	8,025	8,046	217	122,205	20.7
Quebec	167,352	608	95,971	110,301	177	1,448,795	29.0
Ontario	266,928	137	128,957	194,961	497	2,204,922	37.0
Manitoba	27,276	—	13,457	12,558	173	269,515	30.5
Saskatchewan	17,024	—	9,150	8,038	208	230,975	25.6
Alberta	45,975	1	17,331	22,515	444	362,661	29.2
British Columbia	59,613	—	39,198	35,195	471	563,686	35.9
Yukon	—	—	6	1	—	231	1.8
Northwest Territories	—	—	50	4	—	201	1.0
Canada	**616,512**	**752**	**324,986**	**408,827**	**2,618**	**5,439,023**	**31.2**

[1] Ontario four-party telephones included under Rural Lines.

The major telephone systems record completed calls on representative days throughout the year and on this basis estimate the number of local conversations which, added to the actual count of long-distance calls, gives their total volume of business. Estimates are included for the smaller systems. The number of completed calls on all systems in 1959 was estimated at 9,250,220,035, or an average of 1,701 calls per telephone and 530 calls per person. Despite the increase in extended area service which eliminates toll charges between adjacent communities, long-distance calls continue to increase in number.

3.—Local and Long-Distance Calls and Average Calls per Telephone and per Capita, 1950-59

NOTE.—Figures from 1928 will be found in the corresponding table of previous Year Books beginning with the 1939 edition.

Year	Local Calls	Long-Distance Calls	Total Calls	Total Calls per Capita[1]	Average Calls per Telephone		
					Local	Long-Distance	Total
	No.	No.	No.	No.	No.	No.	No.
1950	4,894,719,000	117,892,000	5,012,611,000	366	1,678	40.4	1,718
1951	5,146,238,000	127,406,000	5,273,644,000	376	1,653	40.9	1,694
1952	5,482,973,000	126,721,000	5,609,694,000	389	1,635	37.8	1,673
1953	5,952,756,000	131,899,000	6,084,655,000	412	1,650	36.6	1,687
1954	6,209,771,000	137,761,000	6,347,532,000	418	1,608	35.7	1,644
1955	6,808,389,000	153,087,000	6,961,476,000	446	1,640	36.8	1,677
1956	7,593,525,000	171,280,000	7,764,805,000	486	1,688	38.0	1,726
1957	8,077,101,000	178,608,000	8,255,709,000	498	1,673	37.0	1,710
1958	8,513,455,000[r]	194,186,000	8,707,641,000[r]	511	1,663	37.9	1,701
1959	9,044,825,000	205,395,000	9,250,220,000	530	1,663	37.9	1,701

[1] Per capita figures are based on official estimates of population given at p. 165.

The steady increases in capitalization, income and expenditure of telephone companies together with the increases in number of employees and salaries and wages paid are shown for the years 1950-59 in Table 4. Provincial figures for 1959 are given in Table 5.

4.—Financial Statistics of Telephone Systems, 1950-59

NOTE.—Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

Year	Capital Stock	Funded Debt	Cost of Property and Equipment	Income	Expenditure	Net Income	Employees[1]	Salaries and Wages[2]
	$	$	$	$	$	$	No.	$
1950	274,088,405	286,752,783	806,826,198	198,823,483	178,193,661	20,629,822	45,396	102,093,078
1951	286,003,119	307,623,351	909,581,399	240,762,657	213,824,471	26,938,186	47,387	117,677,652
1952	335,575,292	378,628,224	1,027,527,807	279,001,814	244,506,402	34,495,412	48,207	131,370,832
1953	398,198,697	450,511,233	1,152,309,749	310,833,599	269,817,828	41,015,771	50,540	145,109,934
1954	418,287,016	498,231,715	1,301,545,688	340,623,170	296,384,292	44,238,878	51,929	159,329,238
1955	467,026,669	521,336,006	1,470,679,433	376,716,651	328,880,674	47,835,977	55,673	173,922,973
1956	549,266,657	583,795,407	1,672,363,570	422,370,206	366,117,634	56,252,572	60,121	193,992,142
1957	627,051,991	683,386,827	1,941,591,700	467,701,983	412,158,348	55,543,635	64,074	219,693,002
1958	629,824,492	845,613,559	2,202,747,303	507,689,602	451,672,799	56,016,803	61,400	234,298,163
1959	730,874,613	916,791,207	2,444,576,788	582,262,550	509,727,426	72,535,124	58,826	240,691,244

[1] Full-time only.

[2] Full-time and part-time.

5.—Financial Statistics of Telephone Systems, by Province, 1959

Province or Territory	Capital Liability	Cost of Property and Equipment	Income	Expenditure	Employees[1]	Salaries and Wages[2]
	$	$	$	$	No.	$
Newfoundland	13,203,565	17,007,481	2,959,282	2,154,237	538	1,270,818
Prince Edward Island	3,607,902	5,792,933	1,271,922	1,118,924	159	397,812
Nova Scotia	46,059,210	67,009,481	15,174,174	13,101,858	1,863	5,725,025
New Brunswick	44,974,191	63,661,947	13,955,809	11,920,900	1,540	4,953,497
Quebec[3]	1,008,687,167	647,014,458	396,572,508	343,972,176	16,222	72,948,296
Ontario[3]	23,880,320	971,219,590	12,661,222	10,716,398	22,132	91,691,364
Manitoba	83,825,377	126,159,475	21,368,972	20,692,908	3,507	12,206,615
Saskatchewan	92,658,812	117,284,539	24,065,171	22,390,374	1,993[4]	8,132,717[4]
Alberta	115,564,613	161,459,229	33,100,180	29,892,426	4,138	15,815,582
British Columbia	215,139,663	267,933,754	61,111,017	53,745,967	6,731	27,531,502
Yukon	65,000	33,901	22,293	21,258	3	18,016
Totals	**1,647,665,820**	**2,444,576,788**	**582,262,550**	**509,727,426**	**58,826**	**240,691,244**

[1] Full-time employees only. [2] Full-time and part-time. [3] Statistics of The Bell Telephone Company of Canada for both Quebec and Ontario are included under Quebec. [4] Excludes wages and employees for rural systems.

Subsection 3.—Telegraphs

At the end of 1960 nine telegraph and cable companies were in operation in Canada. These systems, composed of lines owned by the Federal Government and the chartered railway and telegraph companies, including the Canadian Overseas Telecommunications Corporation (see p. 862), increased their property and equipment to $267,379,018, more than 17 p.c. above that reported in 1959. A new record was set for operating revenues at $58,546,167, up 11 p.c. from the previous high of 1959, and net income also rose to a new high of $11,761,141, 40 p.c. above the 1959 figure. Fewer telegrams were sent, the lowest number since 1942, but cablegrams continued to increase, numbering 2,663,598 in 1960.

6.—Summary Statistics of Canadian Telegraphs, 1951-60

NOTE.—Figures from 1920 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

Year	Operating Revenues	Operating Expenses	Net Operating Revenue	Pole-Line Milage	Wire Milage	Employees[1]	Messages, Land[2]	Cablegrams and Marconigrams[3]	Money Transferred
	$	$	$	miles	miles	No.	No.	No.	$
1951	29,128,473	27,807,547	1,320,926	53,580	435,348	10,611	21,815,837	1,785,836	16,955,699
1952	33,093,843	31,617,156	1,476,687	52,699	437,581	11,272	21,614,196	1,934,433	19,514,490
1953	36,920,384	33,953,196	2,967,188	52,727	450,835	11,618	21,222,706	2,042,921	21,553,387
1954	38,203,590	33,203,942	4,999,648	46,284	434,178	10,629	19,906,354	2,105,513	21,550,372
1955	39,320,960	32,501,844	6,819,116	48,067	438,692	10,852	20,067,424	2,238,433	23,264,851
1956	40,720,213	33,688,888	7,031,325	48,062	442,891	10,833	20,381,641	2,429,893	24,295,308
1957	44,796,778	39,271,893	5,524,885	48,379	451,669	11,159	19,163,723	2,580,745	25,586,057
1958	47,633,991	39,908,538	7,725,453	47,495	464,661	10,587	17,296,786	2,499,871	24,434,887
1959	52,962,913	43,511,666	9,451,247	47,470	486,875	10,586	16,390,997	2,602,974	25,589,067
1960	58,546,167	45,538,063	13,008,104	48,159	510,640	10,279	15,546,292	2,663,598	25,134,534

[1] Excludes commission operators. [2] Includes messages to and from vessels on the Great Lakes and the St. Lawrence River and messages to and from stations. [3] Excludes relayed messages.

Subsection 4.—Overseas Telecommunication Services

The Canadian Overseas Telecommunication Corporation was established in 1950 to maintain and operate, in Canada and elsewhere, external telecommunication services for the conduct of public communications by cable, radiotelegraph and radiotelephone and any other means of telecommunication between Canada and any other place and between Newfoundland and any other part of Canada; to make use of all developments in cable and radio transmission and reception for external telecommunication services; and to conduct investigation and research with the object of improving and co-ordinating such telecommunication services with the telecommunication services of other parts of the Commonwealth.

In 1952 the Corporation commenced an expansion program of overseas services designed to meet future requirements and the following services have so far been established: direct radiotelegraph communications between Canada and France, Italy and Germany; direct radiotelegraph, radiotelephone, telex and picture transmission services with Australia, New Zealand and Japan from stations at Ladner and Cloverdale, B.C.

In 1956 the first transatlantic telephone cable, a joint project with the British Post Office, American Telephone and Telegraph Company and the Corporation, was brought into service. Apart from normal use of the system for public telephone and telegraph message traffic, capacity is available for private leased circuits. The Corporation introduced the International Telex service into Canada in 1956 and service with 50 countries is now available. The first transatlantic slow-scan television pictures were transmitted between Canada and the United Kingdom in 1959. Twenty-four telephone circuits have been provided and are now in use between the mainland and Newfoundland.

At present under construction is the Canada–United Kingdom 80-circuit telephone cable scheduled for completion in 1961. Jointly with the Great Northern Telegraph Company, the Corporation will provide a Canada–Greenland–Iceland 24-circuit telephone cable—primarily to meet the North Atlantic communication needs of international civil aviation—scheduled to come into operation in 1962. A four-party project (Canada, United Kingdom, Australia and New Zealand) will provide a Canada–New Zealand–Australia 80-circuit telephone cable. This section of the Commonwealth round-the-world telephone cable system is scheduled for completion early in 1964.

In addition to the overseas services operated by the Canadian Overseas Telecommunication Corporation, two cable companies operate submarine cables landing in Canada—the Commercial Cable Company and the Western Union Telegraph Company. These companies operate to stations in the United Kingdom, Ireland, the United States, the Azores and St. Pierre and Miquelon Islands. The number of cables operating between connected stations and the length of cables are given in the following table.

7.—Cable Landings in Canada, 1960

Company and Station	Cables	Nautical Miles
	No.	No.
Canadian Overseas Telecommunication Corporation—		
Halifax, N.S. via Azores to Porthcurno, England	1	3,078
Halifax, N.S. via Nfld. to Porthcurno, England	1	2,656
Halifax, N.S. to Bermuda	1	874
Port Alberni, B.C. to Auckland, New Zealand	1	6,748
Port Alberni, B.C. to Sydney, Australia	1	7,830
Sydney Mines, N.S. via Clarenville, Nfld. to Oban, Scotland	[1], [2]	2,280
Commercial Cable Company—		
St. John's, Nfld. to Waterville, Eire	4[3]	7,086
St. John's, Nfld. to New York, N.Y., U.S.A.	2	2,587
Canso, N.S. via Azores to Ireland	2	3,426
Canso, N.S. to New York, N.Y., U.S.A.	2	2,890
Canso, N.S. to St. John's, Nfld.	2	913

For footnotes, see end of table.

7.—Cable Landings in Canada, 1960—concluded

Company and Station	Cables	Nautical Miles
	No.	No.
Western Union Telegraph Company—		
Bay Roberts, Nfld. to Penzance, England	4	8,479
Bay Roberts, Nfld. to Hammil, N.Y., U.S.A.	2	2,778
Bay Roberts, Nfld. to Azores	1	1,343
Heart's Content, Nfld. to Valencia, Ireland	4[3]	7,541
Placentia, Nfld. to St. Pierre and Miquelon Islands	2	250
North Sydney, N.S. to St. Pierre and Miquelon Islands	3	594
North Sydney, N.S. via Canso to Duxbury, Mass., U.S.A.	1	695
North Sydney, N.S. to Island Cove, Nfld.	2	635
North Sydney, N.S. to Colinet, Nfld.	1	323
Island Cove, Nfld. to St. Pierre and Miquelon Islands	1	130
Eastern Telephone and Telegraph Company—		
Sydney Mines, N.S. via Clarenville, Nfld. to Oban, Scotland	[1], [2]	2,280
Sydney Mines, N.S. via Clarenville, Nfld. to Penmarch, France	[2]	2,400
New Brunswick Telephone Company Limited—		
Campobello Island, N.B. to Lubec, Me., U.S.A.	1	0.3

[1] Cable is licensed for operation by two carriers according to its two parts. [2] Cable is twin system from Clarenville, Nfld. to Oban, Scotland and single cable from Clarenville, Nfld. via Terranceville, Nfld. to Sydney Mines, N.S. [3] One cable unserviceable.

Subsection 5.—Federal Government Telegraph and Telephone Services and Meteorological Communications

Telegraph and Telephone Services.—The Telecommunications and Electronics Branch of the Department of Transport owns submarine cables for the provision of telephone service to certain islands off the Atlantic coast of Nova Scotia. Telegraph service is also provided at a few isolated places in Labrador. As of Mar. 31, 1961, these facilities consisted of 9.5 miles of submarine cable, and seven radiotelephone stations.

Meteorological Communications.—Weather stations operated by the Meteorological Branch of the Department of Transport throughout Canada are linked coast-to-coast by means of teletype and in the remote northern areas by radio or radioteletype. The landline teletype circuits are leased from commercial companies. The radio circuits are operated chiefly by the Telecommunications and Electronics Branch of the federal Department of Transport.

Weather stations on the teletype network transmit their reports directly; other stations report via commercial or radio facilities to the nearest station on the teletype line for subsequent transmission on the meteorological circuit. The reports are collected on a regional basis and then relayed to other parts of the country as required. There are two coast-to-coast systems transmitting weather information, with main relay points at Vancouver, Edmonton, Winnipeg, Toronto, Montreal, Halifax, Gander and Goose Bay. These main meteorological communications centres not only handle the distribution of weather information within Canada including the Arctic, but also effect international exchange with the United States and Europe and, through them, with many other countries. For the latter purpose, the Canadian Meteorological Branch and the British Meteorological Office share the cost of a leased duplex circuit in the transatlantic cable. Altogether, the Meteorological Branch uses 55,200 miles of teletype circuits connecting 327 teletype offices.

In addition, a facsimile network connects forecast offices including radio facsimile transmission to Arctic stations and ships at sea. Weather charts originating at the Central Analysis Office in Montreal receive national distribution over this network. Regional transmissions of additional charts are distributed on a local basis. Altogether, the Meteorological Branch utilizes 11,200 miles of facsimile circuits, serving 54 forecast offices.

Subsection 6.—Federal Government Radio Communication Services

Radio in Canada traces its origin to the year 1900 when wireless telegraphy was introduced and placed under the jurisdiction of the Department of Public Works. The first commercial radio circuit was established between Chateau Bay, Que., and Belle Isle in the Strait of Belle Isle in 1901, replacing an underwater cable which was difficult to maintain. In the first days of radio there did not appear to be any necessity for special legislative control, but the growth of this new medium of communication was very rapid and the Wireless Telegraph Act of 1905 became the first legislation in Canada controlling radio communication.

Radio regulation and radio coast station services were under the jurisdiction of the Department of Public Works until 1909, at which time they were transferred to the Department of Marine and Fisheries where they remained until 1930, with the exception of the period 1914-22 when they were under the jurisdiction of the Department of Naval Services. In 1930, when a separate Marine portfolio was established, they became a Branch of that Department and then in 1936 a Division of the Air Services Branch of the newly formed Department of Transport. In 1936 an aviation radio service was organized within the Radio Division, and to it in 1948 was transferred the Government Telegraph and Telephone Service, which had been under the jurisdiction of the Department of Public Works since 1879. In 1950, the name was changed to Telecommunications Division, and later to Telecommunications and Electronics Branch.

The radio activities of the Telecommunications and Electronics Branch may be summarized as follows: (1) the administration of national and international radio laws and regulations and of regional agreements, involving the issuance of radio licences, inspection of radio stations, certification of radio equipment, examination of operators, assignment and monitoring of frequencies, study of radio wave propagation, compilation and settling of international accounts for radio messages, investigation and suppression of inductive interference to radio reception; and (2) construction, maintenance and operation of radio communication stations and radio aids to marine and air navigation.

The national and international radio laws and regulations and the regional agreements administered by the Telecommunications and Electronics Branch include: (1) the Broadcasting Act; the Radio Act and Regulations made thereunder; the radio provisions of the Canada Shipping Act and Ship Station Radio Regulations; (2) the International Telecommunications Convention and Radio Regulations annexed thereto; the Articles of the International Civil Aviation Convention applicable to aeronautical radio requirements; that part of the International Convention for the Safety of Life at Sea applicable to radio requirements for ships; the Inter-American Telecommunication Convention; the Inter-American Radio Agreement; the North American Regional Broadcasting Agreement; the Convention between Canada and the United States of America relating to the operation by citizens of either country of certain radio equipment or stations in the other country; and the Agreement between Canada and the United States of America for the promotion of safety on the Great Lakes by means of radio.

Licensing and Operation.—In all branches of radio, basic control is exercised over the right to establish a station, assignment of frequencies, operator standards, operating procedure, and general regulations concerning the manner in which radio stations are used.

Under the Broadcasting Act, the Board of Broadcast Governors regulates the establishment and operation of broadcasting networks, the activities of public and private broadcasting stations and the relationship between them, in the interest of providing a national broadcasting service of high standard, basically Canadian in content and character. While the Minister of Transport is the licensing authority under the Radio Act, the Broadcasting Act requires that applications for broadcasting station licences or for any change in an existing broadcasting station be referred to the Board of Broadcast Governors for its recommendation before being dealt with by the Department. Reasonably complete and technically acceptable applications are therefore referred to the Board of Broadcast

Governors by the Department. Before such a licence may be issued, the approval of the Governor in Council is also required. With these exceptions, the technical control of broadcasting stations is carried out by the Telecommunications and Electronics Branch of the Department of Transport.

The standard broadcast band is crowded with stations that are capable of interfering with one another over the entire North American region, particularly at night. A plan for the accommodation of the largest number of stations with the least interference was evolved as a result of extensive studies conducted by Canada, Cuba, the Dominican Republic, Haiti, the Bahama Islands, Mexico and the United States and was embodied in the North American Regional Broadcasting Agreement.

Before a new standard broadcasting station can be licensed or before modifications can be made in an existing station, engineering briefs covering the selection or change of frequency, amount of power and design of the directional antenna system must be approved by the Department of Transport and notification sent to the signatory countries of the North American Regional Broadcasting Agreement. After the establishment or change is completed, proof of performance must be submitted to establish that the actual installation is in accordance with the approved plan.

Ten monitoring stations are maintained at suitable points across Canada to police and monitor the radio spectrum: to see that radio stations are complying with the procedure set forth for their particular service; to observe the emissions from stations and ensure that they comply with the rules applicable to their service; to detect non-licensed stations and ensure that stations are being used for the purpose for which they are licensed; to assist in the investigation of cases of inter-station interference; to make studies of spectrum occupancy with a view to finding spectrum space for new assignments; and to make precise frequency measurements to determine if the operating frequencies of all classes of radio stations are within the tolerances as prescribed by domestic and international regulations. A mobile monitoring station has been equipped to carry out the investigation of those technical and operational aspects of emissions on frequencies that cannot be monitored by stations in fixed locations.

Under the Safety of Life at Sea Convention and the Canada Shipping Act, most passenger ships and larger cargo ships must be fitted with radiotelegraph or radiotelephone equipment, primarily for distress use. Approval is given for each make and model of equipment that comes up to the required standard and, in addition, the ship station as a whole is inspected after the licence is issued and periodically thereafter. Foreign ships are subject to inspection before sailing from Canadian ports to ensure that they conform with the requirements of the Safety of Life at Sea Convention. Also, certain passenger, cargo, and other ships plying the Great Lakes are inspected to ensure compliance with the requirements of the agreement between Canada and the United States for the promotion of safety on the Great Lakes by means of radio.

Standards have been developed for the installation of aircraft radio stations specifying in detail the techniques and materials that may be used, to ensure that such stations will satisfactorily perform the function for which they are intended. Inspections of radio stations aboard civil aircraft of all operational categories are carried out at prescribed periods. In-flight inspections of the radio communications and navigational aspects of proposed new air carrier operations, encompassing both land and oceanic routes, are also made as required.

Marine and aeronautical radio operator standards and related regulations are covered by international agreement. The International Telecommunication Convention prescribes the qualifications for radio operators on mobile stations and the Radio Act provides that all operators, both commercial and amateur, must pass examinations to prove their ability to operate the respective classes of stations on which they are engaged. Competent operators are required on all classes of stations in order that the technical requirements prescribed under international agreement be adhered to closely; they are particularly essential on ship and aircraft stations in the interest of safety of life.

Investigation and Suppression of Inductive Interference.—Under the Radio Act the use of electrical equipment that will produce harmful interference to radio reception is not permitted. The Telecommunications and Electronics Branch of the Department of Transport maintains 75 cars equipped for measuring and locating sources of interference to broadcast, television and other radio reception. In addition to locating the sources of interference, advice is given as to how it may be suppressed or eliminated. These cars operate from permanent radio inspection offices located in 29 cities throughout Canada. During the year 1959, 25,188 sources of interference were located and suppression was obtained in all but a few cases. Power lines were the largest single source of interference, constituting 73 p.c. of the total Apart from cases of actual interference, the Branch also gives technical advice and assistance to manufacturers of electrical apparatus, in an effort to reduce the radio noise (interference) produced by such apparatus.

Recent amendments to the Radio Act prohibit the sale of electrical apparatus which will produce radio noise in excess of specified limits. Regulations specifying the limits to be met by particular types of apparatus are contained in the Radio Noise Limits Order.

Another recent amendment to the Radio Act provides for exemption from the operation of the Act certain low-powered radio transmitting and receiving equipment which has been so Type Approved by the Department. Exemption approval has been granted to a number of models of garage door radio controls and other devices, which consequently may be operated without the radio station licence otherwise required.

Radio Revenue.—Regulations concerning the rendering and settlement of international ship-shore traffic accounts are contained in the International Telecommunication Convention and Regulations. Sources of revenue include commercial ship and inter-station messages handled by Departmental ship and land stations, radiotelegrams exchanged by foreign ships through Canadian coast stations, private commercial traffic *via* Departmental airway radio stations, and radio services rendered to aircraft of private airline companies by such stations. During the year ended Mar. 31, 1960, accounts with a gross value of $533,504 were handled with respect to chargeable traffic *via* Marine Radio Stations consisting of 135,254 ship-shore radiotelegrams, 43,915 point-to-point messages and 38,610 duplex radiotelephone conversations. For air-to-ground and message communication services provided by aeronautical stations, accounts were handled with a total value of $1,503,364.

8.—Radio Revenue Collected by the Department of Transport, Year Ended Mar. 31, 1960

Stations	Revenue	Stations	Revenue
	$		$
Marine Stations—		**Other Radio Revenue—**	
Private commercial messages and duplex radiophone calls	425,226	Examination fees—Radiotelegraph Operators' Certificate of Proficiency	5,486
		Licence fees	839,956
		Rentals	481,510
Aeronautical Stations—		Sales	126,173
		Miscellaneous	24,665
Air-to-ground and message communication services	891,481	**Totals**	**2,794,497**

Radio Aids to Marine and Aeronautical Navigation.—Services of the Telecommunications and Electronics Branch of the Department of Transport in aid of marine and aeronautical navigation are described in the following paragraphs. Details may be obtained on request from the Department of Transport, Ottawa.

Marine Navigation.—Radio aids to marine navigation are provided for about 4,000 radio-equipped Canadian vessels and almost as many foreign ships using Canadian waters. A safety and communications service for shipping is provided covering the East and West Coasts, the Great Lakes, the St. Lawrence River and Gulf, Hudson Bay and Hudson Strait.

Coast radio stations provide a safety watch and communications service for ships at sea and provide, as well, regularly broadcast weather reports, storm warnings and notices of dangers to navigation. Ships at sea may obtain medical advice from any coast station. The messages are delivered to the port medical officer of the Department of National Health and Welfare and replies are transmitted to the ship free of charge. The stations carry out communications by radiotelegraph and/or radiotelephone, and many of them provide connections to land telephone lines so that ships may communicate directly with any telephone subscriber. At Halifax (CFH) and Vancouver (CKN), shortwave facilities are furnished for world-wide communications. These stations participate in the Commonwealth long-range ship communication scheme. The coast stations on Hudson Bay and Hudson Strait, in addition to the regular services, provide commercial communications for posts of the Hudson's Bay Company and various prospecting and development organizations, make weather observations, handle administrative traffic and assist aircraft with information, landing conditions and direction finding bearings.

Coast radio direction finding stations, operated on Hudson Strait, enable ships to obtain a line of bearing from the station. No charge is made for this service. A chain of automatic *radiobeacon stations* is also maintained to provide a navigational aid to mariners by transmitting signals on which bearings may be taken by ships. These stations are arranged, where possible, in groups of three, transmitting on a common frequency but in proper time sequence so as to avoid interfering with one another. A navigator may thus obtain three bearings within three consecutive minutes and fix his location. For distance finding in foggy weather, a number of radiobeacons are synchronized with fog alarms at the same point. Ships may also request the transmission of signals from the coast stations for direction finding purposes.

Loran is a long-range radio aid to marine and air navigation which provides accurate fixes at distances up to 600 miles by day and 1,500 miles by night. Two Loran stations operate in Nova Scotia, three in Newfoundland and one on the West Coast. These stations, in conjunction with Loran stations of the United States Coast Guard, give service to ships and aircraft plying the North Atlantic and Pacific Oceans.

Decca is a short-range radio aid to navigation which provides accurate fixes at distances up to 250 miles. Three chains of Decca stations are in operation—one in Nova Scotia and two in Newfoundland—and the relocated Quebec chain, to be known as the Anticosti Chain, is scheduled to go in operation in October 1961. These stations give service to ships off Newfoundland and Nova Scotia, and in the St. Lawrence River and Gulf.

Radar is a valuable aid to marine navigation and it has become general practice to equip merchant ships with this device. Important buoys are fitted with radar reflectors to increase their radar visibility. Two shore-based radar installations are in operation—one at Camperdown near the mouth of Halifax Harbour and the other on the Lion's Gate Bridge across the entrance to Vancouver Harbour.

Lighthouses, particularly at locations where they would otherwise be completely cut off from summoning help in case of illness, are provided with low-powered transceivers for use in emergencies.

Aeronautical Navigation.—Radio aids to air navigation are provided from coast to coast and from the Canada–United States border to the Arctic along and off the airways, and are used by many Canadian and foreign air carriers flying over Canadian territory. Trained engineers and technicians are assigned to six regional offices located at Vancouver, B.C., Edmonton, Alta., Winnipeg, Man., Toronto, Ont., Montreal, Que., and Moncton, N.B., to carry out the construction and efficient operation of facilities.

The principal radio aid to air navigation provided by the Department of Transport is the low-frequency *radio range station*, located approximately every hundred miles along airways. It provides specific track guidance to pilots by means of audible signals and the signals may also be used for the purpose of obtaining direction finding bearings. In addition, radiotelephone communications are provided between ground and aircraft, by which means pilots may obtain weather data, air traffic control instructions and other information concerning the safety of flights.

Twenty-six very high frequency *omni-directional ranges* (VOR) are now in operation. Unlike the low-frequency radio range stations, this type of facility does not limit the aircraft using the station to one of four distinct courses but enables the pilot to select any desired course. The 26 omni-directional ranges have permitted the establishment of VOR airways across Canada and of 17 trans-border airways. Sixteen additional installations are under construction and should be in operation by the autumn of 1961. Preliminary work has begun on three others.

Aeronautical radiobeacon stations provide radio signals with which pilots may use their direction finding equipment to obtain relative directional bearings. *Fan markers*, operating on very high frequencies, are usually placed on an airway so as to inform the pilot when he may safely lose altitude after passing high terrain or to indicate accurately the distance from an airport. *Station location markers* are similar to fan markers except that the signal radiated is such that aircraft may receive the same indication irrespective of the direction of flight. They are installed at the same location as a radio range to enable a pilot to determine when he is exactly over the station, thus obtaining definite indication of position. Station location markers are installed at most radio range sites.

Airport and airway surveillance radars (150 nautical-mile) are in operation at 11 airports for air traffic control purposes. Four additional installations are completed, to be commissioned early in 1961. A 50-mile-range surveillance radar at Gander forms part of a complete ground-controlled approach facility. Another ground-control facility is in operation at Toronto International Airport.

Instrument landing systems provide radio signals which, when received by special radio equipment aboard aircraft, permit pilots to approach airports for landing during periods of very low visibility. An installation normally consists of a localizer transmitter providing lateral guidance to the runway, a glide path transmitter for slope guidance to the approach end of the runway, two marker transmitters giving distance indications from the runway and a low-power radiobeacon (compass locator) to assist in holding procedures and lining up on the localizer course. The localizer and marker transmitters operate on very high frequencies, the glide path on ultra high frequencies and the compass locators on low and medium frequencies. Thirty-three instrument landing systems are in operation.

To assist in providing communication between aircraft and ground, *aeronautical radio communications stations* are located at strategic points across the country, including the Arctic. These stations, operating for the most part on high frequencies, provide communication with both domestic and international air carriers. The 13 international communications stations provide coverage from coast to coast as well as over the oceans and form a major contribution on the part of Canada to international aviation. Their functions may be grouped as follows: (1) communication for meteorological services; (2) communication for air traffic control services; and (3) communication for the benefit of airline operating agencies with their aircraft and between their despatch offices.

Subsection 7.—Other Government, Miscellaneous and Commercial Radio Communication Services

Radio services have been established by all provincial governments, mainly for police, highway and forestry protection purposes.

Municipal government departments have steadily increased their use of radio to facilitate operations particularly as a medium of communication with vehicles—police, fire, engineering, hydro, etc. In addition, the trend toward expansion in the employment of radio for urban mobile communication has shown no signs of abating. Such services as taxi, heavy construction, ready-mix concrete, oil pipeline construction and operation, veterinarian and rural medical have participated extensively in the increase. This trend was accelerated during the latter part of 1960; relaxation in eligibility restrictions permitted the granting of radio station licences to a greater portion of the general public.

Public utilities, power companies, provincial power commissions, oil exploration and mineral development organizations have expanded considerably their use of radio in both urban mobile and point-to-point radio fields.

The member companies of the Telephone Association of Canada have established and are operating coast-to-coast microwave facilities to augment existing inter-city communication services and to provide television network service. This system has a number of trans-border (Canada–United States) inter-connections and is being continually modified and extended to provide better service. The railway companies also operate a number of large microwave radio systems to facilitate their inter-city communication services.

The Telephone Association members, independent telephone companies and the railways are increasingly extending communication service, by means of radio, to northern areas where such service was previously unavailable.

In addition, the telephone companies provide an extension of land telephone service, by radio, to suitably equipped vehicles. This service is available in all major cities in Canada and along many of the nation's arterial highways. Service of a similar nature is also provided by radio to land stations of subscribers in areas not served by normal wire telephone facilities. Restricted common-carrier mobile radio service (this service to vehicles does not permit inter-connection with the over-all telephone system but only with specific despatchers) is now available in most major cities in Canada as well as in a number of areas of lesser population. The latter service is provided by telephone companies as well as other common-carrier organizations.

Subsection 8.—Radio and Television Broadcasting*

Broadcasting in Canada has developed over a period of some 40 years as a combination of public and private enterprise. Since the opening program from Canada's first radio station was beamed into a few Montreal homes in 1918, the role of the radio and television program in the daily life of the Canadian family has grown to startling prominence. Today, radio service reaches 98 p.c. of Canada's homes and its programs are listened to for an average of two hours and 20 minutes a day. Television reaches over 88 p.c. of the homes and is watched for an average period of four hours and 45 minutes each day.

To have become such an integral force in the daily life of the nation, broadcasting had to learn the needs of the people and how to serve them. Two official languages forming two distinct cultures had to be served independently but without diminishing the concept of national unity. Dozens of other smaller groups, distinct in culture and frequently dwelling in the same radio or TV coverage area but in separate communities with widely divergent program interests had to be served. Physical problems of distance and geography had to be overcome. It requires some 320 radio transmitters and 80 TV stations and satellites to reach a population distributed across a 4,000-mile southern frontier, through seven time zones and a variety of topographical and climatic regions, and scattered northwest through thousands of square miles to the shores of the Arctic Ocean. Not only do these people have local service that is a reflection of life in their own districts, but by means of 15,000 miles of land lines for radio networks and 8,500 miles of microwave circuits for television nearly every Canadian may, at the same time, listen or watch as an event of national interest takes place.

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* With the exception of the paragraphs relating to the establishment and functions of the Board of Broadcast Governors and the material on privately owned stations (pp. 877-878) prepared by the Secretary of the Board, the material in this Subsection was supplied by the Information Services of the Canadian Broadcasting Corporation, Ottawa.

The cost of such service to each Canadian during 1960 was approximately 6.5 cents a day, amounting to a $443,000,000 broadcasting industry for Canada. Some $240,000,000 of this was spent to purchase, maintain and operate receiving sets; the remainder was the cost of station and network operation.

Since 1932, a publicly owned body, now known as the Canadian Broadcasting Corporation, created to develop a national service, has worked with the private or independent station-owner to establish this service. A more recent addition is the Board of Broadcast Governors. Each of these—the private station-owner, the CBC and the BBG—is playing a responsible part in the present efforts to refine and develop broadcasting service in Canada.

The Broadcasting Act, proclaimed in November 1958, established the Board of Broadcast Governors to consist of three full-time members including the Chairman and Vice-Chairman and 12 part-time members. Sect. 10 of this Act provides that the Board of Broadcast Governors shall "for the purpose of ensuring the continued existence and efficient operation of a national broadcasting system and the provision of a varied and comprehensive broadcasting service of a high standard that is basically Canadian in content and character, to regulate the establishment and operation of networks of broadcasting stations, the activities of public and private broadcasting stations in Canada and the relationship between them, and provide for the final determination of all matters and questions in relation thereto".

The Broadcasting Act also requires that, before dealing with any application for a licence to establish a broadcasting station or for an increase in power, change of frequency or change of location of a broadcasting station, the Minister of Transport must receive a recommendation from the Board of Broadcast Governors. The same requirement exists with respect to the making of a new regulation or effecting changes in the regulations under the Radio Act. Before making the appropriate recommendation to the Minister of Transport, the Board considers all such applications at a public hearing at which the applicant, licensees and the Canadian Broadcasting Corporation have been given the opportunity of being heard.

Under the provisions of the Radio Act, the Minister of Transport must also receive a recommendation from the Board before dealing with any application to change the ownership or control of any share of capital stock in the licensee of a broadcasting station which is incorporated as a private company. The Board of Broadcast Governors has established a policy that any such application, which would result in a change of ownership or control of a licensee, would be referred to a public hearing before a recommendation is made to the Minister. Applications of this kind not involving a change of ownership or control may be dealt with by the Board or the Executive Committee of the Board at a regular meeting.

Under the provisions of the Broadcasting Act, the Board has issued the Radio Broadcasting Stations Regulations and the Radio (TV) Broadcasting Regulations, these regulations applying to radio and television stations respectively, covering all aspects of station operation and the enforcement of them as the responsibility of the Board.

Since its establishment in November of 1958, the Board has made 127 recommendations to the Minister of Transport on applications referred to it under Sect. 12 of the Act.

The Broadcasting Act also provides authority for the publicly owned Canadian Broadcasting Corporation, established "for the purpose of operating a national broadcasting service". The Corporation consists of a President and a Vice-President and nine other directors appointed by the Governor in Council. It is accountable to Parliament through a Cabinet Minister designated by the Governor in Council and is empowered to establish and maintain program networks and stations.

As of May 1, 1961, there were 38 CBC radio stations and 14 CBC television stations; 201 privately owned radio stations and 46 privately owned television stations. All but eight of the privately owned television stations and many of the privately owned radio stations are affiliated with the CBC and help to distribute national radio and television services over five networks operated by the CBC.

Radio Broadcasting Facilities.—The CBC operates three AM radio networks—the Trans-Canada and Dominion networks serving English-language audiences from the Atlantic to the Pacific, and the French-language network extending from Moncton, N.B., to Edmonton, Alta. As at May 1, 1961, the Trans-Canada network was made up of 26 basic stations—13 CBC-owned and 13 privately owned. There were 30 supplementary stations, four of which were CBC-owned Newfoundland stations and nine of which were stations of the CBC Northern and Armed Forces Service. The Dominion network consisted of 31 basic stations of which 30 were privately owned. Nineteen supplementary privately owned stations also received Dominion network service. The French network had five basic stations, four of which were CBC-owned and one privately owned, and 22 privately owned supplementary stations.

Table 9 lists the broadcasting stations of the CBC radio networks.

9.—Broadcasting Stations of CBC Radio Networks, as at May 1, 1961

NOTE.—The stations marked with an asterisk (*) are CBC-owned. The symbols used in the Power column have the following meanings: D, daytime; N, night; DA-1, one directional antenna both day and night; DA-2, two directional antennae, one in daylight, the other at night; DA-N, single directional antenna used at night only. Wattage of some stations differs between day and night as shown.

Station Location	Frequency	Power	Station Location	Frequency	Power
	kc/s.	watts		kc/s.	watts
Trans-Canada Basic Network—			**Trans-Canada Supplementary—**		
*CBI Sydney	1,140	5,000 DA-1	*CFGB Goose Bay	1,340	250
*CBH Halifax	1,340	100	*CBN St. John's	640	10,000
*CBA Sackville	1,070	50,000	*CBY Corner Brook	790	1,000
CHSJ Saint John	1,150	10,000 DA-2	*CBG Gander	1,450	250
		5,000 DA-2	*CBT Grand Falls	990	1,000
CFNB Fredericton	550	50,000 DA-2	CKEC New Glasgow	1,320	1,000 D
*CBM Montreal	940	50,000			250 N
*CBO Ottawa	910	5,000 DA-1	CKBW Bridgewater	1,000	1,000 DA-N
CKWS Kingston	960	5,000 DA-1	CKMR Newcastle	790	1,000 DA-1
*CBL Toronto	740	50,000	CKBC Bathurst	1,400	250
CFCH North Bay	600	1,000 DA-1	CJQC Quebec	1,340	250
CJKL Kirkland Lake	560	5,000 DA-N	CKOC Hamilton	1,150	5,000 DA-2
CKGB Timmins	680	5,000 DA-N	CHLO St. Thomas	680	1,000 DA-1
CKSO Sudbury	790	10,000 D	CHOK Sarnia	1,070	5,000 D
		5,000 N DA-2			1,000 DA-N
*CBE Windsor	1,550	10,000 DA-1	CJNR Blind River	730	1,000 DA-N
CJIC Sault Ste. Marie	1,050	10,000 D	CFAR Flin Flon	590	1,000
		2,500 N DA-N	*CHFC Fort Churchill	1,230	250
CKPR Fort William	580	5,000 D	*CFYT Dawson	1,230	100
		1,000 N	*CFYK Yellowknife	1,340	150
*CBW Winnipeg	990	50,000	*CBXH Fort Smith	860	40
*CBK Regina	540	50,000	*CFHR Hay River	1,490	40
*CBX Edmonton	1,010	50,000 DA-1	*CFWH Whitehorse	1,240	250
*CBXA Edmonton	740	250	CFGP Grande Prairie	1,050	10,000 DA-1
CJOC Lethbridge	1,220	10,000 D	CKLN Nelson	1,390	1,000 DA-1
		5,000 DA-N	CKPG Prince George	550	250
CFJC Kamloops	910	10,000 D	CJDC Dawson Creek	1,350	1,000
		1,000 N	CJCA Edmonton	930	10,000 D
					5,000 N DA-N
CKOV Kelowna	630	1,000	CKCK Regina	620	5,000 DA-N
CJAT Trail	610	1,000	CFAC Calgary	960	10,000 DA-N
*CBU Vancouver	690	10,000 DA-1	*CHAK Inuvik	860	1,000
*CFPR Prince Rupert	1,240	250	*CFFB Frobisher Bay	1,200	40

9.—Broadcasting Stations of CBC Radio Networks, as at May 1, 1961—concluded

Station Location	Frequency	Power
	kc/s.	watts
Dominion Basic Network—		
CJCB Sydney	1,270	5,000 D 1,000 N
CHNS Halifax	960	10,000 DA-N
CJFX Antigonish	580	5,000 DA-1
CJLS Yarmouth	1,340	250
CFCY Charlottetown	630	5,000 DA-N
CKCW Moncton	1,220	10,000 DA-N
CFBC Saint John	930	5,000 DA-1
CKNB Campbellton	950	1,000 DA-1
CKTS Sherbrooke	900	1,000 DA-N
CFCF Montreal	600	5,000 DA-1
CKOY Ottawa	1,310	5,000 D 1,000 DA-N
CHOV Pembroke	1,350	1,000 DA-1
CFJR Brockville	1,450	1,000 DA-D 250 N
CHEX Peterborough	980	5,000 DA-2
*CJBC Toronto	860	50,000
CFPL London	980	10,000 D 5,000 N DA-2
CFCO Chatham	630	1,000 DA-1
CFPA Port Arthur	1,230	1,000 D 250 N
CJRL Kenora	1,220	1,000
CKRC Winnipeg	630	5,000 DA-N
CKX Brandon	1,150	10,000 D 1,000 N
CJGX Yorkton	940	10,000 D 1,000 N
CKBI Prince Albert	900	10,000 DA-2
CFQC Saskatoon	600	5,000 DA-N
CHAB Moose Jaw	800	10,000 DA-N
CKRM Regina	980	10,000 DA-2 5,000 DA-2
CFRN Edmonton	1,260	10,000 DA-N
CFCN Calgary	1,060	10,000 DA-N
CHWK Chilliwack	1,270	10,000 DA-1
CJOR Vancouver	600	5,000 DA-1
CJVI Victoria	900	10,000 DA-1
Dominion Supplementary—		
CHML Hamilton	900	5,000 DA-1
CKTB St. Catharines	610	10,000 DA-1 5,000 DA-1
CFOR Orillia	1,560	10,000 D 1,000 N
CHNO Sudbury	900	1,000 DA-N
CHAT Medicine Hat	1,270	1,000 DA-1
CJIB Vernon	940	1,000
CFOB Fort Frances	800	1,000 D 500 N
Dominion Supplementary—concluded		
CKCV Quebec	1,280	5,000 DA-1
CJSS Cornwall	1,220	1,000 DA-2
CJBQ Belleville	800	1,000 DA-1
CKCR Kitchener	1,490	250
CJCS Stratford	1,240	250
CKPC Brantford	1,380	10,000 DA-2
CKNX Wingham	920	2,500 D 1,000 N DA-2
CFOS Owen Sound	560	1,000 DA-2
CKLW Windsor	800	50,000 DA-2
CKRD Red Deer	850	1,000 DA-1
CKLC Kingston	1,380	5,000 DA-2
CKOK Penticton	800	10,000 D 500 N
French Basic Network—		
*CBJ Chicoutimi	1,580	10,000 DA-1
*CBV Quebec	980	5,000 DA-1
*CBF Montreal	690	50,000
*CBAF Moncton	1,300	5,000 DA-1
CHNC New Carlisle	610	5,000 DA-1
French Supplementary—		
CJEM Edmundston	570	1,000 DA-N
CJBR Rimouski	900	10,000 DA-N
CHLT Sherbrooke	630	10,000 D 5,000 N DA-2
CHGB Ste. Anne de la Pocatière	1,350	1,000 D 250 N
CKCH Hull	970	5,000 DA-1
CJFP Rivière du Loup	1,400	1,000 D 250 N
CJAF Cabano (rebroadcasting station of CJFP)	1,340	250
CKVD Val d'Or	1,230	250
CHAD Amos	1,340	250
CKRN Rouyn	1,400	250
CKLS La Sarre	1,240	250
CKLD Thetford Mines	1,230	250
CFCL Timmins	620	10,000 D 2,500 N DA-2
CKSB St. Boniface	1,050	10,000 DA-N
CHFA Edmonton	680	5,000 DA-1
CFNS Saskatoon	1,170	1,000 DA-1
CFRG Gravelbourg	710	5,000 D
CFGR Gravelbourg	1,230	250 N
CFBR Sudbury	550	1,000 D
CKBL Matane	1,250	5,000 DA-1
CKVM Ville Marie	710	1,000 DA-N
CKRB Ville St. Georges	1,460	10,000 D 5,000 N DA-N

CBC Northern Radio Service.—Since November 1958 six radio stations in Northern Canada have been taken over by the CBC—at Whitehorse and Dawson in the Yukon Territory, at Yellowknife and Hay River in the Northwest Territories, at Goose Bay in Labrador and at Fort Churchill in northern Manitoba. Three others have been built at Fort Smith, Inuvik and Frobisher Bay in the Northwest Territories. Low-power relay transmitters were installed at Fort Nelson, B.C., and Watson Lake, Y.T.

Northern stations are able to pick up and relay news and topical programs from CBC transmitters at Lacombe, Alta., Watrous, Sask., and Sackville, N.B. Greater use of facilities at Sackville has resulted in the transmission of programs more extensively to the North.

Network features are provided for all stations on tapes recorded in Montreal and flown to the North on regular airline flights. The stations are staffed with local recruits wherever possible and the CBC Northern Service works closely with the educational service of the Department of Northern Affairs and National Resources.

10.—CBC Radio Stations in Northern Canada

Station Location		Frequency	Power	Date of Start of CBC Operation
		kc/s.	watts	
CFWH	Whitehorse, Y.T.	1,240	250	Nov. 10, 1958
CFYT	Dawson, Y.T.	1,230	100	Nov. 13, 1958
CFYK	Yellowknife, N.W.T.	1,340	250	Dec. 13, 1958
CFGB	Goose Bay, Labrador	1,340	250	Feb. 23, 1959
CBXH	Fort Smith, N.W.T.	860	40	May 29, 1959
CFHR	Hay River, N.W.T.	1,490	40	Sept. 7, 1959
CHFC	Fort Churchill, Man.	1,230	250	Sept. 13, 1959
CBXF[1]	Fort Nelson, B.C.	860	40	Oct. 9, 1959
CBXG[1]	Watson Lake, Y.T.	860	40	Oct. 11, 1959
CHAK	Inuvik, N.W.T.	860	1,000	Sept. 1, 1960
CFFB	Frobisher Bay	1,200	40	Feb. 5, 1961

[1] Low-power relay transmitters.

FM Radio.—With the opening of the three-city CBC-FM network on Apr. 4, 1960, a new bilingual aspect entered Canadian network radio. The network is bilingual in the sense that each station in Toronto, Ottawa and Montreal announces the programs it originates in English or French, without translation into the other language. At the start of each day's programming, however, a program résumé is given in both English and French.

The schedule planners have placed emphasis on the best of the world's music, both popular and classical, live and recorded. CBC news, talks and commentaries in depth and great dramatic works in English and French are also presented.

For the first 18 months of its operation, the frequency modulation network is experimental in nature. The network broadcasts during the evening hours from 7 p.m. to midnight, Monday to Friday, and from noon to midnight on Saturday and Sunday. The network links three existing CBC stations—CBC-FM in Toronto, CBM-FM in Montreal, and CBO-FM in Ottawa.

11.—CBC-FM Stations

Call Letters	Frequency	Power	Location
	mc/s.	kw.	
FM Network—			
CBC-FM	99.1	11.90	Toronto, Ont.
CBM-FM	100.7	3.86	Montreal, Que.
CBO-FM	103.3	0.38	Ottawa, Ont.
French—			
CBF-FM	95.1	3.86	Montreal, Que.
Other—			
CBU-FM	105.7	1.40	Vancouver, B.C.

Television Broadcasting Facilities.—As of May 1, 1961, there were 67 television stations in Canada, plus 26 rebroadcasting and network repeater stations. There were 47 television stations in operation on the English network, nine of which were CBC-owned. On the French network, 12 stations were in operation, four of which were CBC-owned. The CBC and affiliated stations, plus supplementary stations and rebroadcasting and network repeater stations, were located and powered as shown in Table 12.

12.—Broadcasting Facilities of CBC Television Networks, as at May 1, 1961

NOTE.—A single asterisk denotes a rebroadcasting station; a double asterisk denotes a network repeater station.

Station and Location		Channel	Effective Radiated Power[1]	
			Video	Audio
			watts	watts
English Network				
CBC—				
CBYT	Corner Brook, Nfld.	5	197	98.5
CBHT	Halifax, N.S.	3	56,000	34,000
*CBHT-1	Liverpool, N.S.	12	412	248
*CBHT-2	Shelburne, N.S.	8	412	248
*CBHT-3	Yarmouth, N.S.	11	412	248
CBLT	Toronto, Ont.	6	99.500	53,500
CBOT	Ottawa, Ont.	4	50,100	26,700
CBMT	Montreal, Que.	6	43,800	26,200
CBWT	Winnipeg, Man.	3	57,800	34,700
CBUT	Vancouver, B.C.	2	47,600	25,400
**CBWAT	Kenora, Ont.	8	493	247
CFSN-TV	Stephenville, Nfld.	8	490	245
CFLA-TV	Goose Bay, Labrador	8	348	174
**CBUAT	Trail, B.C.	11	164	82
Affiliates—				
CJON-TV	St. John's, Nfld.	6	62,000	33,000
*CJOX-TV	Argentia, Nfld.	10	200	100
CFCY-TV	Charlottetown, P.E.I.	13	38,600	19,300
*CFCY-TV-1	New Glasgow, N.S.	7	209	104
CJCB-TV	Sydney, N.S.	4	100,000	60,000
*CJCB-TV-1	Inverness, N.S.	6	6,000	3,000
CKCW-TV	Moncton, N.B.	2	25.000	15,000
CHSJ-TV	Saint John, N.B.	4	100,000	50,000
CHEX-TV	Peterborough, Ont.	12	102.000	61.200
CKWS-TV	Kingston, Ont.	11	130,000	78.000
CHCH-TV	Hamilton, Ont.	11	150,000	90,000
CKCO-TV	Kitchener, Ont.	13	100,000	54,400
CFPL-TV	London, Ont.	10	325,000	195.000
CKNX-TV	Wingham, Ont.	8	90,000	55,000
CKLW-TV	Windsor, Ont.	9	178,000	107.000
CKVR-TV	Barrie, Ont.	3	100,000	50,000
CKGN-TV	North Bay, Ont.	10	28,500	14,250
CKSO-TV	Sudbury, Ont.	5	30,000	16,000
*CKSO-TV-1	Elliot Lake, Ont.	3	3,400	1,700
CFCL-TV	Timmins, Ont.	6	18,500	9,250
*CFCL-TV-1	Kapuskasing, Ont.	3	8.8	4.4
*CFCL-TV-2	Elk Lake, Ont.	2	3,750	1,760
CJIC-TV	Sault Ste. Marie, Ont.	2	28,000	15,000
CFCJ-TV	Port Arthur, Ont.	2	28,000	15.000
CKX-TV	Brandon, Man.	5	19.300	9.650
CKCK-TV	Regina, Sask.	2	100,000	53.500
CFQC-TV	Saskatoon, Sask.	8	180,000	100,000
CHAT-TV	Medicine Hat, Alta.	6	5.700	3,000
CHCT-TV	Calgary, Alta.	2	100,000	50,000
CFRN-TV	Edmonton, Alta.	3	180.300	90,430
CJLH-TV	Lethbridge, Alta.	7	96,100	44,900
CHEK-TV	Victoria, B.C.	6	100,000	50,000
English Network—concluded				
Supplementary Stations—				
CJCN-TV	Grand Falls, Nfld.	4	8,600	4,300
CJSS-TV	Cornwall, Ont.	8	130,000	78,000
CKMI-TV	Quebec, Que.	5	5,600	2,800
CKRN-TV	Rouyn, Que.	4	50,000	25,000
CHAB-TV	Moose Jaw, Sask.	4	48,000	25,000
CKBI-TV	Prince Albert, Sask.	5	61,000	36,500
CJFB-TV	Swift Current, Sask.	5	13,300	6,650
CKOS-TV	Yorkton, Sask.	3	5,000	2,500
*CKOS-TV-1	Baldy Mountain, Man.	8	9,400	4,700
CHCA-TV	Red Deer, Alta.	6	6,600	3,300
CJDC-TV	Dawson Creek, B.C.	5	212	106
CFCR-TV	Kamloops, B.C.	4	100	50
CHBC-TV	Kelowna, B.C.	2	3,700	1,650
*CHBC-TV-1	Penticton, B.C.	13	300	150
*CHBC-TV-2	Vernon, B.C.	7	310	155
*CHGP-TV-1	Princeton, B.C.	72	39.2	19.6
CHSA-TV	Lloydminster, Sask.	2	14,630	7,300
French Network				
CBC—				
CBAFT	Moncton, N.B.	11	600	324
CBOFT	Ottawa, Ont.	9	31,000	17,000
CBFT	Montreal, Que.	2	100,000	50,000
CBWFT	Winnipeg, Man.	6	2,870	1,720
**CBFST	Sturgeon Falls, Ont.	7	8,750	5,250
Affiliates—				
CHLT-TV	Sherbrooke, Que.	7	170,000	100,000
CKTM-TV	Trois Rivières, Que.	13	42,500	21,250
CFCM-TV	Quebec, Que.	4	12,650	6.330
CKRS-TV	Jonquière, Que.	12	20,000	10,000
CJBR-TV	Rimouski, Que.	3	49,300	28,000
*CJES-TV-1	Estcourt, Que.	70	45.1	22.5
*CFCV-TV-1	Clermont, Que.	75	65.9	32.9
CKBL-TV	Matane, Que.	9	150,000	90,000
CKRN-TV	Rouyn, Que.	4	50,000	25,000
CHAU-TV	New Carlisle, Que.	5	52,500	26,250
Supplementary Stations—				
CFCL-TV	Timmins, Ont.	6	18,500	9,250
*CFCL-TV-1	Kapuskasing, Ont.	3	8.8	4.4
*CFCL-TV-2	Elk Lake, Ont.	2	3,750	1,760
CJSS-TV	Cornwall, Ont.	8	130,000	78,000

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[1] Based on stations' published data.

About 94 p.c. of Canada's population is covered by Canadian television stations. Microwave facilities linking television stations from coast to coast for instantaneous telecasting of programs went into full operation July 1, 1958. In June 1959 these facilities were extended from Sydney, N.S., to St. John's, Nfld., providing a direct visual link between all ten provinces. When television broadcasting began in September 1952, television sets in use in Canada totalled 146,000. One year later the number had tripled and by Jan. 1, 1961 it was estimated that programs of the CBC networks could be viewed in approximately 3,650,000 Canadian homes.

Canadian Broadcasting Corporation Facilities.—In accordance with the Broadcasting Act, the CBC's Head Office is in Ottawa from which over-all direction is provided for the two complete and distinct broadcasting services, one in English and the other in French. Headquarters and main production facilities for the French networks are in Montreal and for the English networks, in Toronto. A truly national program service is provided to the whole country on these networks by programs contributed from the CBC's nine operating divisions: British Columbia, the Prairie Provinces, Quebec, Ontario, Ottawa area, the Maritimes, Newfoundland, the Northern and Armed Forces Service and the International Service. Facilities for the production of radio programs have been developed in some 25 communities as far apart as Prince Rupert in British Columbia, Corner Brook in Newfoundland and Inuvik in the Northwest Territories. Television production facilities have been developed at nine of these 25 locations.

Domestic Radio Program Service.—During the year ended Mar. 31, 1960, about 1,500 programs representing 493 hours of broadcasting, were presented each week over the CBC's Trans-Canada, Dominion and French networks. Of the total broadcasting hours in 1959-60, 70 p.c. were released on the Trans-Canada network; the Dominion network released 6 p.c. and 24 p.c. were carried on the French network.

The CBC originated and produced 92 p.c. of its network broadcasts. Of the remainder, 2 p.c. came from the private stations, 3 p.c. were exchange programs from the United States, 2 p.c. from the United Kingdom, and 1 p.c. came from other countries. An analysis of network programs by categories for 1959-60 shows that a large proportion of CBC radio network time was devoted to music—an estimated 39 p.c.; 56 p.c. of programming was predominantly entertainment (music, drama, sports, etc.); 28 p.c. was predominantly information programs (news and weather, farm and fisheries, science, nature, etc.); and 16 p.c. was predominantly idea or opinion programs.

13.—Hours of English and French Radio Network Programming, by Category

NOTE.—Estimated on basis of sample week, Feb. 7-13, 1960.

Category	Hours per Week	Distribution of Hours	Category	Hours per Week	Distribution of Hours
	No.	p.c.		No.	p.c.
Music, serious	59	12	Sports	25	5
Music, other	133	27	School and youth education	15	3
News and weather	74	15	Political and controversial	10	2
Miscellaneous entertainment	34	7	Miscellaneous information	25	5
Drama	25	5	Social and human relations	5	1
Farm and fisheries	29	6	Science and nature	5	1
Canadian ideas and heritage	29	6			
Religious	20	4			
Home and hobby	5	1	**Totals**	**493**	**100**

Domestic Television Program Service.—During the year ended Mar. 31, 1960, the CBC English-language television network presented 60 hours per week of programs. Of this, 64 p.c. was produced by CBC; 30 p.c. was drawn from sources in the United States; 2

p.c. from other Canadian sources; 2 p.c. from the United Kingdom; and 2 p.c. from other countries. Of the 67 hours presented each week on the French network, 72 p.c. originated with the CBC; 4 p.c. with other Canadian sources; 3 p.c. with sources in France; 12 p.c. in the United States; 4 p.c. in the United Kingdom; and 5 p.c. in other countries.

14.—Hours of English and French Television Network Programming, by Category

NOTE.—Estimated on basis of sample week, Feb. 7-13, 1960.

Category	Hours per Week	Distribution of Hours	Category	Hours per Week	Distribution of Hours
	No.	p.c.		No.	p.c.
Drama	45	35	Relgious	4	3
Variety and other entertainment	18	14	Science and nature	2	2
Sports	10	8	School and youth education	4	3
News and weather	6	5	Political and controversial	4	3
Canadian ideas and heritage	1	1	Home and hobby	4	3
Music	13	10	Farm and fisheries	1	1
Other countries	4	3	Other	1	1
Miscellaneous information	8	6			
Social and human relations	2	2	**Totals**	**127**	**100**

CBC International Service.—The International Service of the Canadian Broadcasting Corporation broadcasts news, news reports, commentaries, interviews, talks, accounts of special events, actualities, and other programs that tell people in other lands about life in Canada. The headquarters and studios are in the Radio-Canada Building in Montreal and the two 50-kw. shortwave transmitters and antenna arrays are in Sackville, N.B. The programs are transmitted directly by shortwave to listeners in 11 languages—English, French, German, Czech, Slovak, Russian, Ukrainian, Polish, Hungarian, Spanish and Portuguese. Shortwave service to Africa in English and French was inaugurated this year. A recorded program service is provided regularly to radio organizations in Austria, Finland and Greece. As required, all radio organizations throughout the world are provided with special relays and recorded programs.

The International Service also provides a Transcription Service to radio organizations in other countries. This consists of music and spoken-word recordings on long-playing discs. The music transcriptions feature the works of Canadian composers, performers, arrangers, conductors and orchestras. The spoken-word transcriptions, in the English, French and Spanish languages, include programs that deal with Canadian drama, history, biography, folklore, documentaries and literature.

In addition to their use for the regular programs of the International Service, the shortwave transmitters at Sackville are employed to provide programs for people living in Canada's Far North and for relay to the members of Canada's Armed Forces stationed abroad. On special occasions, the regular facilities of the International Service are supplemented by commercial radiotelephone facilities to provide simultaneous service to areas of the world beyond the range of the signal from Sackville.

More than 400,000 letters, cards and reception reports have been received from listeners since the official inauguration of the International Service on Feb. 25, 1945. Replies are sent in the language of the letter-writer and a great variety of printed and illustrated information on all aspects of life in Canada is provided. An illustrated Program Schedule is distributed periodically to some 200,000 listeners around the world.

In addition to its international shortwave service, the CBC maintains two domestic shortwave stations—CBNX at St. John's, Nfld., and CBUX at Vancouver, B.C.—for the purpose of extending coverage of the existing standard band stations CBN and CBU.

Canadian Broadcasting Corporation Finances.—Table **15** is a statement of CBC finances for the year ended Mar. 31, 1960. During that year the Corporation supplemented its income from the public treasury by $38,162,337 from commercial sales, reflecting a continuing increase in commercial revenue.

15.—Financial Statement of CBC Operations, Year Ended Mar. 31, 1960

Item	Amount
	$
Income—	
Commercial revenue (gross)	38,162,337
Interest on investments	109,199
Miscellaneous	292,404
Total, Income	**38,563,940**
Expenses—	
Cost of programs	57,890,301
Network distribution	9,141,504
Station transmission	3,010,832
Payments to private stations	5,333,470
Commission to agencies and networks	5,592,000
Northern radio service	490,860
Operational supervision and services	6,877,848
Program	*2,353,525*
Administrative	*2,726,415*
General	*1,797,908*
Selling and general administration	5,702,950
Selling expense	*1,232,043*
Engineering and development	*1,051,347*
Management and central services	*3,419,560*
Total, Expenses	**94,039,765**[1]
Excess of Expenses over Income	**55,475,825**
Recoverable by way of parliamentary grant in respect of the net operating requirements of the radio and television services	52,300,278
Depreciation	3,175,547
	55,475,825

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[1] Included in the above expenses for 1960 are $50,375 for executive officers' remuneration, $34,900 for honoraria to directors and $36,961 for legal expenses.

Privately Owned Stations.—As already stated, privately owned broadcasting stations are subject to the Radio Act, the Canadian Broadcasting Act and Regulations made thereunder, and the provisions of the Radio Regulations annexed to the International Telecommunication Convention and Regional Agreements in effect in Canada. Since Mar. 31, 1923, private commercial broadcasting station licences have been required by government regulation and both sound and television broadcasting stations are now authorized by this class of licence.

Any application for a licence to establish a new private station or for an increase in power, change of channel, or change of location of any existing private station must be referred by the Minister of Transport to the Board of Broadcast Governors. The Broadcasting Act requires that the Board consider such applications at a public hearing and following the hearing the Board makes a recommendation to the Minister of Transport. The approval of the Governor in Council must be obtained before any licence for a new private station is issued. Private commercial broadcasting station licences are conditional upon the ownership or control of the stations, and none of the shares of capital stock of licensed private companies nor the control of licensed public companies may be changed without the permission of the Minister of Transport having been first obtained upon the recommendation of the Board of Broadcast Governors. The Board of Broadcast Governors has ruled that any change in share structure of a licensee involving a change of ownership or control of the licensee will be considered at a public hearing of the Board before a recommendation is made to the Minister. The Radio Broadcasting Stations Regulations require all broadcasting stations to present to the Board at the end of each week a program log for that week indicating the total programming carried by the station. Organizational and financial statements are filed annually, on a confidential basis, with the Department of Transport.

The first sound broadcasting in Canada took place when a privately owned communications company in Montreal was authorized to transmit programs on an experimental basis during the latter part of 1918 and in the winter evenings of 1919 over its Station XWA. Under the first licensing regulations in the year ended Mar. 31, 1923, 34 licences were issued. On Mar. 31, 1961, the number was 240, of which 204 were AM standard band stations, 30 were FM stations and six were shortwave stations.

A privately owned broadcasting station is required to pay to the Receiver General of Canada an annual licence fee based on the gross revenue for licence fee computation for the fiscal year of the station.

The first privately owned television broadcasting station in Canada located at Sudbury, Ont., was authorized to commence scheduled broadcasting on Oct. 20, 1953. By May 1, 1961, 78 privately owned television stations were in operation (see Table **12**).

Section 2.—The Post Office

The Canada Post Office Department was created at the time of Confederation in 1867 by the Canada Post Office Act to superintend and manage the postal service of Canada under the direction of a Postmaster General. For almost a century before Confederation, postal services in the Canadian provinces had been controlled by the British Postmaster General and administered by his deputies. Under the French régime a courier service had been organized as early as 1703 between Quebec, Trois Rivières and Montreal. In 1734 a post road was constructed over the same route and post houses, complete with post horses and vehicles, were established for the use of travellers. In 1851 the control of their post offices was assumed by the different provinces of British North America and at Confederation these systems merged to form the Canada Post Office.

Functions.—The basic tasks of the Canadian Postal Service are to receive, convey and deliver postal matter with security and dispatch. In discharging these duties it maintains post offices and utilizes air, railway, land and water transportation facilities. Associated functions include the sale of stamps and other articles of postage, the registration of letters and other mail for dispatch, the insuring of parcels, the accounting for COD articles, and the transaction of money order and Post Office Savings Bank business. Because of its widespread facilities, it has been found expedient for the Post Office to assist other government departments in the performance of certain tasks including the sale of unemployment insurance stamps, the collection of government annuity payments, the distribution of income tax forms and Civil Service employment application forms, and the display of government posters.

Post offices are established wherever the population warrants. Those in rural areas and small urban centres transact all of the functions of the city office. In larger urban areas postal stations and sub-post offices have full functions similar to the main post office, including a general delivery service, lock-box delivery and letter-carrier delivery.

At Mar. 31, 1960, there were 11,497 post offices in operation compared with 11,634 in 1959. Letter-carrier delivery, performed in 157 urban centres, employed over 7,300 uniformed letter carriers. Postage paid in 1959-60 by means of postage stamps amounted to $83,961,344 as compared with $82,008,654 in 1959. Post office money orders, issued for any amount not exceeding $100 and payable in almost any country of the world, were sold at more than 8,400 post offices and money orders payable in Canada only, for amounts not exceeding $16, were sold at some 2,300 additional post offices. Post Office Savings Banks operate in all parts of the country and, on Mar. 31, 1960, had total deposits of $29,372,460.

Organization.—The Canada Post Office includes an Operating Service and Headquarters at Ottawa. The Operating Service is organized into four regions, each under a Regional Director who is the field representative of the Deputy Postmaster General. There are seven Headquarters Branches—Administration, Operations, Transportation, Comptroller's Branch, Engineering and Development, Financial, and Personnel—each under a Director. Operating and secretarial features in the operating field affecting the post offices and local mail services in urban centres are taken care of by the local postmaster. District office functions relating to services in the district and all inspections and investigations are under District Directors of Postal Services in strategic centres across the country.

Postal service is provided in Canada from Newfoundland to the west coast of Vancouver Island and from Pelee Island, Ont. (the most southerly inhabited point of Canada) to settlements and missions far into the Arctic. Canada's airmail system provides several transcontinental flights daily and constitutes a great air artery from St. John's, Nfld., to Victoria, B.C., intersected by branch lines and connecting lines radiating to every quarter and linking up with the United States airmail system. Since July 1, 1948, all first-class domestic mail up to and including one ounce in weight has been carried by air between one Canadian point and another, whenever delivery can thus be expedited. On Apr. 1, 1954, this service was extended to first-class items up to and including eight ounces in weight. Air stage service provides the only means of communication for many areas in the hinterland. There were approximately 41,069 miles of airmail and air stage routes in Canada in 1960 as compared with 39,633 miles in 1959.

The principal means of mail transportation is the railway mail service that operates along 24,613 miles of track and, in 1960, covered more than 37,420,000 service-miles. A staff of 781 mail clerks prepared the mails for prompt delivery and dispatch while en route in the railway mail cars.

The rural mail delivery organization provided direct postal service over approximately 5,575 rural mail routes in 1960, extending over 139,000 route-miles and serving 506,231 rural mail boxes. Rural mail routes are generally circular in pattern and average about 25.2 miles in length. Considerable progress has been made toward the development of mail service by means of group boxes—a service intended for the more densely populated rural areas and for suburban residents not within the area of letter-carrier delivery service. About 2,500 side services were in operation in 1960 to transport mail between post offices, railway stations, steamer wharves and airports, and 2,007 stage services operated to convey mail to and from post offices not located on railway lines. Transportation of mail by motor vehicle on highways is being developed and over 340 such services are in operation, many of them replacing or reducing conveyance by rail. A local exchange of mails between offices on the route is effected by way-mail wallet. In 1960 there were approximately 820 city mail services transporting mail to and from post offices, postal stations and sub-post offices, collecting mail from street letter-boxes and delivering parcel post. The 10,100 land-mail service couriers employed travelled approximately 50,600,000 miles during the year. Land-mail services are performed under a contract system, the contracts being awarded to the person submitting the lowest tender and competent to provide all the requisite equipment.

Coastal mail service is conducted by 33 contractors who operate as far north along the West Coast as Alaska and on the East Coast to the northern part of Labrador.

Mechanization.—The larger post offices in Canada may be described as intricate industrial plants where mail is unloaded, cancelled, transported and shipped by semiautomatic means. Conveyor belts, automatic chutes and other devices increase output of mail matter without increasing staff and all the larger offices now being constructed are provided with the latest mechanical equipment. Even the letter carrier has been mechanized in some areas—the use of the mailmobile (part motorcycle and part truck) has shown that even the traditional door-to-door method of delivering mail can be improved upon. In most cities, postage stamps may be obtained at any time from automatic vending machines which offer a variety of denominations in neat packages. This service has been followed by the development of a curbside mail receptacle (snorkel) in which patrons may deposit mail without leaving their automobiles. Electronic methods have been introduced for the checking of money orders and for accounting for the almost $1,000,000,000 annually that they represent. Money order forms have been redesigned to improve handling and reduce costs.

Post Office Statistics.—Tables 16 and 17 give the numbers of post offices in operation, together with revenue and expenditure for recent years.

16.—Post Offices in Operation, by Province, as at Mar. 31, 1956-60

Province or Territory	1956	1957	1958	1959	1960
	No.	No.	No.	No.	No.
Newfoundland	636	640	641	647	649
Prince Edward Island	105	105	105	104	104
Nova Scotia	1,124	1,117	1,096	1,031	964
New Brunswick	736	703	676	634	597
Quebec	2,463	2,435	2,413	2,405	2,403
Ontario	2,644	2,627	2,616	2,624	2,629
Manitoba	815	817	810	814	809
Saskatchewan	1,332	1,318	1,310	1,298	1,279
Alberta	1,141	1,124	1,112	1,089	1,082
British Columbia	947	940	937	932	922
Yukon Territory	16	16	16	19	20
Northwest Territories	37	37	36	37	39
Canada	**11,996**	**11,879**	**11,768**	**11,634**	**11,497**

The increase in postal business is one of the impressive features of Canada's economic development during the past ten years. Gross revenue for the year ended Mar. 31, 1960 reached an all-time high.

17.—Revenue and Expenditure of the Post Office Department, Years Ended Mar. 31, 1951-60

NOTE.—Figures from 1868 will be found in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Gross Revenue	Net Revenue[1]	Expenditure[2]	Surplus (+) or Deficit (−)
	$	$	$	$
1951	105,545,456	90,454,678	91,781,466	−1,326,788
1952	122,266,675	104,622,208	97,973,263	+6,648,945
1953	129,388,365	112,024,245	105,553,191	+6,471,054
1954	129,889,325	111,107,484	113,581,752	−2,474,268
1955	151,717,273	131,315,049	123,611,055	+7,703,994
1956	158,568,356	137,696,621	127,421,739	+10,274,882
1957	167,879,869	145,823,785	139,992,921	+5,830,864
1958	177,492,783	152,919,881	153,319,782	−399,901
1959	183,380,508	157,630,336	157,803,478	−173,142
1960	193,593,016	167,562,354	165,792,339	+1,770,015

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[1] Gross revenue less commissions and allowances to postmasters, and other smaller items. [2] Excludes rental of semi-staff and staff post offices.

The gross revenue receipts shown in Table **17** are received mainly from postage, either in the form of postage stamps and stamped stationery, or postage meter and postage register machine impressions. Some postage is also paid in cash without stamps, stamped stationery or meter and register impressions. The gross value of the postage stamps and stamped stationery sold during each of the latest five fiscal years was: $75,559,106 in 1955-56, $77,735,659 in 1956-57, $81,192,007 in 1957-58, $82,008,654 in 1958-59 and $83,961,344 in 1959-60. Receipts from postage meter or postage register impressions and postage paid in cash by other means were as follows: $70,696,501 in 1955-56, $78,041,479 in 1956-57, $83,706,744 in 1957-58, $87,920,080 in 1958-59 and $95,943,284 in 1959-60.

Auxiliary Postal Services.—Auxiliary postal services include the issuing of money orders and the operation of the Post Office Savings Bank.

Table **18** shows the amount of money order business conducted by the postal service in recent years. A table showing the financial business of the Post Office Savings Bank will be found in Chapter XXIII on Currency and Banking.

18.—Operations of the Money Order System, Years Ended Mar. 31, 1956-60

Year	Money Order Offices in Canada	Money Orders Issued in Canada	Value of Orders Issued in Canada	Value Payable in—		Value of Orders Issued in Other Countries, Payable in Canada
				Canada	Other Countries	
	No.	No.	$	$	$	$
1956	11,099	49,081,082	725,930,733	704,230,646	21,700,086	4,643,217
1957	11,022	51,182,296	799,615,004	772,708,244	26,906,761	5,033,806
1958	10,934	52,898,954	845,647,439	818,333,292	27,314,147	5,394,568
1959	10,823	53,746,050	853,443,891	825,973,053	27,470,837	5,026,970
1960	10,778	54,953,087	868,669,133	840,584,556	28,084,576	5,250,922

Section 3.—The Press

An article in the 1957-58 Year Book traces developments in Canadian journalism from their beginnings in 1752 to (circa) 1900. A second article appearing in the 1959 edition brings that account up to the date of writing (1958). The complete presentation is available in reprint form from the Dominion Bureau of Statistics.

Daily newspapers published in Canada numbered 110 in 1960, counting morning and evening editions separately. English and French dailies had an aggregate reported circulation of close to 4,000,000—about 82 p.c. in English and 18 p.c. in French. Twelve of these enjoying circulations in excess of 100,000 accounted for more than half of the circulation. French dailies, as would be expected, have their widest circulation in Quebec where 10 of the 12 in existence in 1960 were published. Some of the largest of these papers have been established in that province for over 60 years. Information regarding foreign-language publications is not available for 1960.

Weekly newspapers serve more people in rural communities than do the dailies. They cater to local interests and exercise an important influence in the areas they serve.

The Canadian Press, a co-operative organization owned and operated by Canada's daily newspapers, provides its 100 members with world and Canadian news and news photographs, mostly by means of teletype and wirephoto transmission. It also serves weekly newspapers and radio and television stations. It is, in effect, a partnership through which each member newspaper provides its fellow members with the news of its particular area and through which the general news of the world is brought to Canada. Cost of editing and transmission is divided among members according to the population of the cities in which they publish. CP gets world news from Reuters, the British agency, and from the Associated Press, the United States co-operative, and these agencies have reciprocal arrangements with CP for their coverage of Canada.

The British United Press is a limited company in Canada and maintains a close association with the United Press International, of which it is an affiliate. From its headquarters in Montreal and its 12 Canadian bureaus, it serves directly (1961) North America, South America, Europe and Australia with news from Canada, as well as 185 subscribers including 58 private broadcasting stations in Canada. Agence France Presse maintains offices in Montreal and Ottawa and certain foreign newspapers have agencies in Ottawa to interpret Canadian news for their readers.

Press Statistics.—The following tables are based on data estimated from *Canadian Advertising* and include English and French newspapers only. No information is available regarding foreign-language newspapers for 1960; numbers and circulations for 1958 and 1959 are given in the 1960 Year Book at p. 919 and figures back to 1945 in previous editions beginning with the 1947 edition.

One serious difficulty has been encountered in connection with the compilation of newspaper circulation figures. Reliable circulation figures are relatively easy to obtain for daily newspapers because, in their own best interest, such papers qualify for and subscribe to the Audit Bureau of Circulation requirements; for these, A.B.C. 'net paid' figures have been used. However, it is difficult to obtain reliable circulation figures for many weekly newspapers and for magazines, and those shown in the following tables should be used with reservations.

19.—Estimated Numbers and Circulations[1] of reporting Daily and Weekly[2] English-Language Newspapers, by Province, 1958-60

NOTE.—Figures from 1945 will be found in the corresponding table of previous Year Books beginning with the 1947 edition.

Province or Territory	1958				1959				1960			
	Daily		Weekly		Daily		Weekly		Daily		Weekly	
	No.	Circulation	No.	Circulation	No.	Circulation	No.	Circulation	No.	Circulation	No.	Circulation
Nfld.	3	30,508	4	32,494	3	27,387	5	33,546	3	26,819	5	31,962
P.E.I.	3	24,635	—	—	3	24,343	—	—	3	24,870	—	—
N.S.	6	149,936	27	91,688	6	148,662	28	94,165	6	150,364	30	100,779
N.B.	5	82,362	14	47,527	5	85,576	14	47,097	5	84,409	14	46,171
Que.	4	302,315	26	1,572,776[3]	4	310,221	27	1,667,940[3]	4	318,998	27	1,746,051[3]
Ont.	44	1,635,886	239	1,817,226[4]	45	1,597,981	247	1,851,940[4]	47	1,650,811	249	2,093,523[4]
Man.	6	208,675	67	86,681	6	214,582	67	87,528	6	216,203	68	109,462
Sask.	4	104,625	148	134,544	4	106,459	145	139,591	4	109,130	153	167,567
Alta.	5	225,439	103	166,757	5	236,966	105	177,446	6	252,756	103	179,422
B.C.	14	442,214	83	226,040	14	433,768	83	237,984	14	434,065	87	221,783
Yukon and N.W.T.	—	—	2	4,111	—	—	2	4,500	—	—	2	4,500
Canada	**94**	**3,206,595**	**713**	**4,179,844**	**95**	**3,185,945**	**723**	**4,341,737**	**98**	**3,268,425**	**738**	**4,701,220**

[1] Circulation not reported for all newspapers.
[2] Includes semi-weeklies, tri-weeklies and week-end newspapers.
[3] Includes one week-end newspaper which is circulated with daily newspapers in other provinces.
[4] Includes one week-end newspaper which is circulated with a daily.

20.—Estimated Numbers and Circulations[1] of reporting Daily and Weekly[2] French-Language Newspapers, by Province, 1958-60

NOTE.—Figures from 1945 will be found in the corresponding table of previous Year Books beginning with the 1947 edition.

Province	1958				1959				1960			
	Daily		Weekly[3]		Daily		Weekly[3]		Daily		Weekly[3]	
	No.	Circulation	No.	Circulation	No.	Circulation	No.	Circulation	No.	Circulation	No.	Circulation
N.S.	—	—	1	1,654	—	—	1	1,715	—	—	1	1,820
N.B.	1	8,818	2	8,295	1	10,026	2	8,294	1	10,808	2	8,450
Que.	10	613,926	141	2,151,117[4]	10	639,783	146	2,356,209[5]	10	664,845	162[6]	2,576,056
Ont.	1	30,060	5	15,325	1	31,080	5	14,102	1	34,529	6	18,102
Man.	—	—	1	7,810	—	—	1	7,868	—	—	1	8,382
Sask.	—	—	2	1,822	—	—	2	2,044	—	—	2	2,376
Alta.	—	—	1	3,373	—	—	1	2,467	—	—	1	2,450
Totals	**12**	**652,804**	**153**	**2,189.396**	**12**	**680,889**	**158**	**2,392,699**	**12**	**710,182**	**175**	**2,617,636**

[1] Circulation not reported for all newspapers. [2] Includes semi-weeklies, tri-weeklies and week-end newspapers. [3] Includes bilinguals. [4] Includes one week-end newspaper which is circulated with other newspapers. [5] Includes two week-end newspapers which are circulated with other newspapers.
[6] Includes two week-end newspapers which are circulated with other newspapers (circulation for one not available).

21.—Estimated Numbers and Circulations of reporting Daily and Weekly English-Language Newspapers Published in Urban Centres of 30,000 Population or Over, 1959 and 1960

NOTE.—Figures from 1945 will be found in the corresponding table of previous Year Books beginning with the 1947 edition.

Urban Centre	Census 1956	1959				1960			
	Households	Daily		Weekly		Daily		Weekly	
	No.	No.	Circulation	No.	Circulation	No.	Circulation	No.	Circulation
Brantford, Ont.	14,642	1	21,119	—	—	1	21,214	—	—
Calgary, Alta.	52,785	2	105,965	1	16,500	2	111,429	1	16,500
Edmonton, Alta.	57,748	1	106,608	2^r	$13,840^r$	1	110,238	2	14,103
Fort William, Ont.	10,118	1	15,453	—	—	1	15,709	—	—
Guelph, Ont.	9,284	1	13,104	—	—	2	16,973	—	—
Halifax, N.S.	21,194	2	107,131	—	—	2	108,259	1	6,450
Hamilton, Ont.	63,815	1	102,085	—	—	1	105,082	—	—
Kingston, Ont.	12,499	1	21,085	—	—	1	21,391	—	—
Kitchener, Ont.	16,074	1	34,468	—	—	1	35,936	—	—
London, Ont.	28,962	2	105,780	—	—	2	105,439	—	—
Moncton, N.B.	8,647	2	25,861	—	—	2	25,782	—	—
Montreal, Que.	285,501	2	295,867	4	1,587,054[1]	2	304,559	3	1,651,781[1]
New Westminster, B.C.	8,874	1	17,539	—	—	1	17,485	—	—
Oshawa, Ont.	13,530	1	16,260	—	—	1	16,603	—	—
Ottawa, Ont.	56,059	2	139,859	1	6,500	2	139,474	4	19,900
Peterborough, Ont.	11,632	1	22,286	1	5,621	1	23,029	1	6,008
Port Arthur, Ont.	9,979	1	14,149	—	—	1	14,325	—	—
Quebec, Que.	38,556	1	5,594	—	—	1	5,597	—	—
Regina, Sask.	23,883	1	51,747	—	—	1	52,631	1	6,000
St. Catharines, Ont.	10,971	1	27,159	—	—	1	27,976	—	—
St. John's, Nfld.	11,219	2	21,777	2	25,446[2]	2	21,281	2	24,127[2]
Saint John, N.B.	13,336	2	46,031	1	7,240	2	44,876	1	6,041
Sarnia, Ont.	11,917	1	15,371	1	15,000	1	15,525	1	15,000
Saskatoon, Sask.	20,315	1	39,696	—	—	1	41,476	—	—
Sault Ste. Marie, Ont.	9,169	1	15,646	—	—	1	16,361	—	—
Sherbrooke, Que.	13,646	1	8,760	1	3,400	1	8,842	1	3,400
Sudbury, Ont.	11,526	1	25,915	—	—	1	28,910	—	—
Sydney, N.S.	6,914	1	25,320	—	—	1	26,009	—	—
Toronto, Ont.	157,137	4	736,957	9	1,292,763[3]	4	770,546	10	1,501,628[4]
Trois Rivières, Que.	10,912	—	—	1	4,168	—	—	1	4,168
Vancouver, B.C.	108,953	2	318,365	8	70,794	2	318,139	7	40,778
Victoria, B.C.	17,309	2	51,243	1	1,987	2	52,814	1	1,803
Windsor, Ont.	33,280	1	77,360	—	—	1	77,445	—	—
Winnipeg, Man.	67,798	2	196,748	1	..	2	200,474	2	14,834[5]

[1] Includes one week-end newspaper circulated with daily newspapers in other cities. [2] Includes one week-end newspaper. [3] Includes three week-end newspapers. [4] Includes four week-end newspapers.
[5] Circulation for one weekly only.

22.—Estimated Numbers and Circulations of reporting Daily and Weekly French-Language Newspapers Published in Urban Centres of 30,000 Population or Over, 1959 and 1960

Note.—Figures from 1945 will be found in the corresponding table of previous Year Books beginning with the 1947 edition.

Urban Centre	Census 1956	1959				1960			
	Households	Daily		Weekly		Daily		Weekly	
	No.	No.	Circulation	No.	Circulation	No.	Circulation	No.	Circulation
Edmonton, Alta.	57,748	—	—	1	2,467	—	—	1	2,450
Hull, Que.	11,167	—	—	3	64,849[1]	—	—	2[2]	4,000
Lachine, Que.	8,557	—	—	1	15,600[3]	—	—	1	15,600[3]
Moncton, N.B.	8,647	1	10,026	—	—	1	10,808	—	—
Montreal, Que.	285,501	3	369,340	23	1,699,387[4]	3	387,230	24	1,901,272[5]
Ottawa, Ont.	56,059	1	31,080	—	—	1	34,529	—	—
Quebec, Que.	38,556	3	190,518	2[6]	25,000[7]	3	193,416	1[8]	..
St. Laurent, Que.	9,304	—	—	2	10,171[9]	—	—	2	10,980[9]
Sherbrooke, Que.	13,646	1	34,127	1	38,170	1	34,556	1	38,170
Sudbury, Ont.	11,526	—	—	1	1,989	—	—	1	1,989
Trois Rivières, Que.	10,912	1	33,308	3	7,936[10]	1	34,220	3	7,936[10]
Verdun, Que.	21,009	—	—	1	8,742	—	—	1	8,955

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[1] Includes one week-end newspaper which is circulated with newspapers in other cities.
[2] Includes one week-end newspaper which is circulated with dailies in other cities (circulation not available).
[3] Bilingual.
[4] Includes 8 bilinguals and 12 week-end newspapers including one which is circulated with newspapers in other cities.
[5] Includes 9 bilinguals and 11 week-end newspapers including one which is circulated with dailies in other cities.
[6] Week-end newspapers.
[7] Circulation for one week-end newspaper only.
[8] Week-end newspaper.
[9] Includes one bilingual.
[10] Circulation for two weeklies only.

CHAPTER XIX.—DOMESTIC TRADE AND PRICES

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—THE MOVEMENT AND MARKETING OF COMMODITIES

Domestic trade is broad and complicated; it encompasses all values added to commodities traded, provincially and interprovincially, by agencies and services connected with the storage, distribution and sale of goods, such as railways, steamships, warehouses, wholesale and retail stores, financial institutions, etc. Taken in a wide sense, it embraces various professional and personal services including amusement services, such as theatres and sports. Only certain phases of this broad field are covered here and, wherever possible, cross references are given to related material appearing in other Chapters. The arrangement of material in a volume such as the Year Book is governed by the necessity of interpretation from various angles. The index will be found useful in this respect.

Section 1.—Merchandising and Service Establishments*

The next census of merchandising and service establishments will be for the year 1961. The first census of this kind in Canada related to business transacted for the year 1930 and similar censuses were taken for 1941 and 1951. It is worth noting now that the scope of the data being collected for 1961 has been widened. Gross margin information will be collected from retail stores and wholesalers. Operating expense figures will be collected from wholesalers and service businesses and more information will be sought about the operating characteristics of retailers and wholesalers.

The results of the 1930 and 1941 Censuses of Merchandising and Service Establishments are contained in Vols. X and XI of the Census reports for those years and the results of the 1951 Census of Distribution in Vols. VII and VIII of the 1951 Census reports. Summary data for 1951 are given in the 1955 Year Book, pp. 953-977. The results of the 1961 Census will be available about mid-1963.

Census information is supplemented in intercensal years by monthly, quarterly and annual surveys on the more important phases of the retail, wholesale and service trades—sample surveys for some businesses and full coverage for others. The 1951 Census formed a new base for such surveys and certain improvements have been implemented for continuance during the 1951-61 intercensal period. Current information available on the distributive trades is given in the following Subsections. Estimates for the years prior to 1951 have been revised in accordance with the census base.

Subsection 1.—Wholesale Trade

Wholesale Sales.—Estimated sales of wholesalers expanded from $5,784,400,000 in 1951 to $8,234,800,000 in 1959. These figures include only wholesalers proper, i.e., they exclude agents and brokers and manufacturers' sales branches. Sales estimates are subject to revision and have not been adjusted for price changes.

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* Prepared in the Merchandising and Services Section of the Industry and Merchandising Division, Dominion Bureau of Statistics.

1.—Wholesale Sales, by Kind of Business, 1955-59

Note.—Includes only wholesalers proper, i.e., firms performing the function of buying merchandise on their own account for resale.

Kind of Business	1955	1956	1957	1958	1959
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000
Fresh fruits and vegetables	224.4	230.2	228.2	252.7	265.0
Groceries and food specialties	1,046.9	1,117.2	1,215.2	1,328.3	1,420.2
Meat and dairy products	133.9	141.4	146.0	167.8	168.2
Clothing and furnishings	84.8	84.0	80.9	81.7	86.3
Footwear	28.8	28.9	27.9	29.9	33.6
Other textile and clothing accessories	182.6	196.3	197.1	210.5	214.1
Drugs and drug sundries	164.6	176.9	187.7	202.2	220.4
Household electrical appliances	164.4	163.0	159.5	164.5	174.8
Farm machinery	60.2	72.1	60.3	73.4	93.0
Coal and coke	148.0	171.0	162.0	139.4	134.9
Hardware	280.1	310.2	303.8	295.5	314.9
Construction materials and supplies, including lumber	704.8	760.3	732.8	770.6	802.0
Industrial and transportation equipment and supplies	561.6	742.2	721.4	621.7	686.3
Commercial, institutional and service equipment and supplies	89.8	102.9	102.7	106.6	124.0
Automotive parts and accessories	302.7	338.0	342.1	363.8	395.8
Newsprint, paper and paper products	240.5	264.3	265.0	257.3	271.2
Tobacco, confectionery and soft drinks	473.3	509.0	544.6	572.9	606.4
Other	1,725.2	2,076.7	1,989.3	2,004.7	2,223.7
Totals, All Trades	**6,616.6**	**7,484.6**	**7,466.5**	**7,643.5**	**8,234.8**

Subsection 2.—Retail Trade

The trend of retail trade is one of the best general indicators of the economic condition of the country. It is through retail stores that most goods are ultimately sold and such sales reflect the financial strength of the consumer except in times of short supply. The estimated value of retail sales nearly doubled in the period 1949-59. Estimates, not adjusted for price changes, are shown by province in Table **2** for 1930 and 1941-59 and by kind of business for the latest five years in Table **3**.

2.—Retail Trade, by Province, 1930 and 1941-59

NOTE.—Figures for 1931-40 are given in the 1957-58 Year Book, p. 938.

Year	Atlantic Provinces[1]	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia[2]	Canada[3]
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000
1930	197	646	1,091	188	188	175	251	2,736
1941	279	820	1,388	193	189	228	318	3,415
1942	301	876	1,447	206	201	243	346	3,619
1943	319	913	1,488	220	219	266	362	3,786
1944	351	976	1,574	243	249	296	404	4,093
1945	387	1,081	1,774	269	279	329	455	4,573
1946	491	1,342	2,265	338	341	416	593	5,787
1947	564	1,621	2,721	407	410	504	737	6,963
1948	607	1,792	3,067	466	473	611	818	7,835
1949	734	1,872	3,294	523	538	697	874	8,532
1950	822	2,183	3,715	567	571	777	982	9,617
1951	899	2,443	4,130	610	659	854	1,100	10,693
1952	982	2,635	4,383	651	764	939	1,177	11,532
1953	1,018	2,756	4,616	677	845	987	1,228	12,128
1954	1,025	2,798	4,634	637	758	964	1,249	12,066
1955	1,127	3,006	5,115	669	748	1,035	1,412	13,112
1956	1,211	3,322	5,499	700	812	1,159	1,594	14,298
1957	1,234	3,521	5,663	726	855	1,211	1,616	14,826
1958	1,290	3,647	5,934	754	914	1,275	1,631	15,444
1959	1,362	3,878	6,218	813	951	1,355	1,707	16,284

[1] Newfoundland included from 1949. [2] Includes the Yukon and Northwest Territories. [3] Totals are not the exact addition of the components because of rounding of the figures.

3.—Retail Trade, by Kind of Business, 1955-59

Kind of Business	1955	1956	1957	1958	1959
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000
Grocery and combination stores	2,430	2,639	2,894	3,126	3,287
Other food and beverage stores	950	1,044	1,082	1,120	1,178
General stores	530	568	596	625	630
Department stores	1,150	1,242	1,282	1,345	1,420
Variety stores	250	274	296	315	331
Motor vehicle dealers	2,370	2,542	2,483	2,414	2,613
Garages and filling stations	718	822	939	1,037	1,104
Men's clothing stores	214	230	235	238	250
Family clothing stores	200	215	218	227	226
Women's clothing stores	225	247	257	265	273
Shoe stores	123	129	136	146	155
Hardware stores	256	291	302	318	326
Lumber and building material dealers	451	483	458	482	492
Furniture, appliance and radio dealers	541	584	567	566	581
Restaurants	468	508	528	543	567
Fuel dealers	268	312	322	326	342
Drug stores	300	329	358	383	405
Jewellery stores	124	130	131	133	137
Miscellaneous	1,545	1,706	1,743	1,838	1,967
Totals, All Trades	**13,112**	**14,298**	**14,826**	**15,444**	**16,284**

Retail Chain Stores.—Retail chains are defined as companies operating four or more retail outlets in the same or related kinds of business. A consistent rise in sales has been evident since statistics were first compiled on chain store operations in 1930.

4.—Retail Chain Store Statistics, 1930 and 1941-59

Year	Stores	Net Retail Sales	Salaries and Wages Paid to Store Employees	Value of Stocks on Hand End of Year		Accounts Outstanding End of Year
				Stores	Warehouses	
	Av. No.	$'000	$'000	$'000	$'000	$'000
1930	8,097	487,336	50,405	60,457	..	..
1941	7,622	639,210	57,777	68,619	20,976	38,376
1942	7,010	687,447	57,654	66,940	22,633	..
1943	6,780	703,950	58,804	67,628	22,602	15,527
1944	6,560	769,643	63,300	66,944	21,855	15,093
1945	6,580	876,209	68,196	68,247	29,013	16,368
1946	6,559	1,014,847	77,474	85,345	37,436	19,643
1947	6,716	1,177,323	91,266	105,040	43,546	31,492
1948	6,821	1,335,735	107,450	119,132	46,330	40,378
1949	6,839	1,420,081	115,903	123,696	46,755	50,001
1950	7,155	1,559,693	129,334	159,083	60,501	65,000
1951	7,846	1,775,744	153,599	186,562	60,490	53,816
1952	7,766	1,924,873	154,642	172,886	55,215	77,475
1953	7,835	2,048,228	171,167	179,704	52,096	91,538
1954	8,136	2,146,635	181,509	191,049	57,814	102,747
1955	8,274	2,353,955	199,611	205,833	63,120	127,362
1956	8,559	2,647,055	221,136	232,392	72,183	143,357
1957	8,822	2,841,569	242,979	248,284	78,521	148,506
1958	9,122	3,073,147	262,456	265,862	78,512	158,232
1959	9,491	3,280,263	285,691	282,530	80,440	162,453

5.—Retail Chain Store Sales, by Province and by Kind of Business, 1955-59

Province and Kind of Business	1955	1956	1957	1958	1959
	$'000	$'000	$'000	$'000	$'000
Province					
Newfoundland	12,982	15,267	24,079	23,849	35,708
Maritime Provinces	155,728	169,946	179,396	190,928	198,095
Quebec	488,374	540,628	576,716	619,584	674,002
Ontario	1,096,030	1,230,388	1,335,056	1,451,325	1,508,626
Manitoba	94,235	100,591	112,126	120,715	131,908
Saskatchewan	102,129	111,353	118,935	128,762	137,037
Alberta	160,909	182,111	197,763	219,751	245,747
British Columbia	237,734	289,846	289,463	309,336	341,548
Yukon and Northwest Territories	5,835	6,925	8,034	8,897	7,592
Canada	**2,353,955**	**2,647,055**	**2,841,569**	**3,073,147**	**3,280,263**
Kind of Business					
Foods and Beverages[1]	**1,486,644**	**1,685,394**	**1,835,648**	**1,994,366**	**2,143,559**
Combination grocery and meat stores	970,793	1,104,060	1,249,288	1,368,883	1,481,136
Restaurants	34,602	36,374	36,194	38,236	40,718
Alcoholic beverage stores	465,772	527,952	530,143	556,383	587,817

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[1] Includes other kinds of business not shown separately.

5.—Retail Chain Store Sales, by Province and by Kind of Business, 1955-59—concluded

Kind of Business	1955	1956	1957	1958	1959
	$'000	$'000	$'000	$'000	$'000
Kind of Business—concluded					
General Merchandise (excl. department stores)[1]	**280,871**	**313,976**	**338,645**	**357,199**	**379,638**
General stores	37,450	41,144	42,774	42,513	44,290
Variety stores	207,831	229,307	247,223	264,298	282,591
Automotive	**39,923**	**42,043**	**48,299**	**56,022**	**62,068**
Apparel and Accessories[1]	**175,077**	**190,674**	**202,078**	**222,490**	**238,448**
Men's and boys' clothing and furnishings	27,037	28,866	28,159	29,157	30,148
Women's clothing stores	61,897	67,269	70,707	78,147	81,357
Family clothing stores	33,418	36,347	40,459	44,958	50,373
Shoe stores	48,054	53,433	57,822	63,938	70,150
Building Materials and Hardware	**114,963**	**141,316**	**140,534**	**154,151**	**155,923**
Furniture and Household Appliances	**120,515**	**137,059**	**130,727**	**133,301**	**132,083**
Other Retail Stores[1]	**135,962**	**136,592**	**145,638**	**155,618**	**168,544**
Drug stores	36,660	41,299	45,437	49,912	53,383
Jewellery stores	43,016	46,301	45,205	47,017	48,736

[1] Includes other kinds of business not shown separately.

Operating Results of Retail Chain Stores.—A survey of the operating results of retail chain stores is carried out every second year. Results of the 1959 survey are given in Table 6.

6.—Operating Results of Retail Chain Stores for Selected Kinds of Business, 1959

(Percentage of net sales)

Kind of Business	Gross Profit	Salaries and Wages	Occupancy Expenses[1]	Total Operating Expenses[2]	Net Operating Profit	Net Non-trading Income	Net Profit before Income Tax
Grocery	16.49	9.17	2.07	15.28	1.21	0.22	1.43
Combination grocery and meat	17.90	7.88	2.14	15.17	2.73	0.30	3.03
Meat	..	..	..	..	..	..	..
Men's clothing	35.65	15.87	5.86	33.92	1.73	0.86	2.59
Women's clothing	34.61	15.11	7.33	31.58	3.03	1.13	4.16
Family clothing	32.58	15.36	4.45	29.27	3.31	0.32	3.63
Shoe	35.94	15.80	7.14	30.19	5.75	0.31[3]	5.44
Variety	38.66	18.10	5.09	29.93	8.73	0.69	9.42
Drug	33.92	18.51	5.34	31.56	2.36	1.22	3.58
Furniture	36.13	16.78	4.99	41.24	5.11[4]	12.19	8.08

[1] Includes taxes and insurance, light, heat and power, repairs, maintenance, depreciation (except on delivery equipment) and rentals on rented premises. [2] Includes salaries and wages and occupancy expenses. [3] Net non-trading expense. [4] Net operating loss.

Operating Results of Independent Retail Stores.—The trades included in the independent retail store classification are divided into two groups, which are surveyed in alternate years. Operating ratios given in Table 7 are therefore for 1958 or 1959 as indicated.

7.—Operating Ratios of Independent Retail Stores, by Kind of Business, 1958 or 1959

(Percentage of net sales)

Kind of Business	Cost of Goods Sold	Gross Profit	Salaries and Wages[1]	Occupancy Expenses[2]	Total Operating Expenses[3]	Net Profit before Income Tax[4]
1958						
Unincorporated						
Grocery	84.9	15.1	2.5	4.0	9.2	6.5
Combination	84.9	15.1	4.2	3.2	10.7	4.8
Meat	80.9	19.1	5.5	3.5	13.0	6.6
Confectionery	80.8	19.2	3.3	6.2	11.7	8.1
Fruits and vegetables	81.0	19.0	4.0	4.7	12.5	7.0
Men's clothing	71.4	28.6	6.6	5.9	18.2	11.1
Family clothing	72.9	27.1	7.4	6.0	18.7	9.6
Women's clothing	71.2	28.8	7.5	7.2	20.3	9.1
Family shoe	70.7	29.3	7.5	6.1	18.1	11.8
General stores	85.2	14.8	3.2	3.2	9.0	6.2
Incorporated						
Men's clothing	69.1	30.9	15.6	6.0	28.2	3.2
Family clothing	69.4	30.6	15.3	5.1	28.1	2.8
Women's clothing	68.1	31.9	17.0	6.9	30.4	2.6
Family shoe	66.8	33.2	17.3	6.7	29.8	3.7
1959						
Unincorporated						
Drug	68.4	31.6	8.8	5.4	18.9	13.6
Filling station	77.7	22.3	7.2	5.0	14.7	8.0
Garage	66.8	33.2	12.4	6.1	22.6	11.2
Fuel	77.6	22.4	5.4	2.6	16.8	6.2
Hardware	73.0	27.0	7.6	5.1	17.7	10.4
Furniture	72.8	27.2	6.1	5.5	18.8	9.0
Appliance and radio	70.3	29.7	9.7	5.3	22.6	8.5
Jewellery	58.0	42.0	10.1	8.7	26.3	16.6
Restaurant	59.8	40.2	16.9	11.2	32.4	8.4
Incorporated						
Drug	67.0	33.0	19.0	5.6	29.9	3.8
Jewellery	62.2	37.8	19.5	7.5	35.9	2.8
Fuel	76.4	23.6	8.4	2.6	20.7	3.5
Hardware	72.1	27.9	16.6	4.7	26.9	1.8
Furniture	73.7	26.3	13.3	5.4	27.1	1.1
Appliance and radio	74.7	25.3	13.2	3.7	24.3	2.0

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[1] Excludes delivery and, for unincorporated stores, also excludes proprietors' salaries. [2] Includes taxes and insurance, light, heat and power, repairs, maintenance, depreciation (except on delivery equipment) and rentals on rented premises. [3] Includes salaries and wages and occupancy expenses. [4] Includes net non-trading income and, for unincorporated stores, proprietors' salaries or withdrawals.

New Motor Vehicle Sales.—Sales of new motor vehicles reached an all-time high in 1959. The 502,626 vehicles sold at $1,540,168,000 exceeded the former high level of 1956 by 2,705 units and $84,793,000.

8.—Retail Sales of New Motor Vehicles, 1950-59

Year	Passenger Cars		Trucks and Buses		Totals	
	No.	$	No.	$	No.	$
1950	324,903	661,673,944	104,792	223,995,095	429,695	885,669,039
1951	275,686	683,182,846	109,962	266,976,665	385,648	950,159,511
1952	292,095	725,168,000	108,682	278,495,000	400,777	1,003,663,000
1953	359,172	899,726,000	103,354	262,745,000	462,526	1,162,471,000
1954	310,546	797,554,000	72,082	191,964,000	382,628	989,518,000
1955	386,962	1,023,351,000	78,716	232,539,000	465,678	1,255,890,000
1956	408,233	1,128,640,000	91,688	326,735,000	499,921	1,455,375,000
1957	382,023	1,087,620,000	76,276	281,311,000	458,299	1,368,931,000
1958	376,723	1,110,724,000	68,046	254,742,000	444,769	1,365,466,000
1959	425,038	1,240,961,000	77,588	299,207,000	502,626	1,540,168,000

Farm Implement Sales.—Sales of new machinery in 1959 amounted to $212,231,000 exceeding 1958 sales by 23.4 p.c. In addition, $38,887,438 was spent for repair parts during 1959, higher by 14.4 p.c. than the amount so spent in 1958. All provinces shared in the increased business.

9.—Sales of Farm Implements and Equipment, by Major Group, 1955-59

(Values at wholesale prices)

Major Group	1955	1956	1957	1958	1959	Percentage Change 1958-59
	$'000	$'000	$'000	$'000	$'000	
Tractors and engines	58,760	63,262	56,651	63,171	78,938	+25.0
Ploughs	8,225	8,019	8,952	9,790	11,189	+14.3
Tilling, cultivating and weeding machinery	7,016	7,071	7,845	9,656	11,920	+23.4
Planting, seeding and fertilizing machinery	5,341	6,094	6,703	7,104	7,894	+11.1
Haying machinery	19,820	27,245	23,566	26,257	30,655	+16.7
Harvesting machinery	27,564	34,753	23,984	29,851	44,122	+47.8
Machines for preparing crops for market or for use	4,933	4,768	5,556	6,102	7,510	+23.1
Farm wagons, wagon trucks and sleighs	1,433	1,805	1,527	1,900	1,994	+ 4.9
Barn equipment	2,671	2,637	2,863	3,521	3,869	+ 9.9
Dairy machinery and equipment	3,953	4,787	5,468	6,488	5,139	−20.8
Spraying and dusting equipment	1,996	1,770	1,269	1,558	1,466	− 5.9
Miscellaneous farm equipment	11,412	8,556	5,518	6,616	7,535	+13.9
Totals	**153,124**	**170,767**	**149,902**	**172,014**	**212,231**	**+23.4**

10.—Sales of Farm Implements and Equipment, by Province, 1958 and 1959

(Values at wholesale prices)

Province or Region	1958		1959		Percentage Change 1958-59
	Amount	P.C. of Total	Amount	P.C. of Total	
	$		$		
Atlantic Provinces	5,797,262	3.4	6,482,227	3.1	+11.8
Quebec	26,468,820	15.4	27,030,562	12.7	+ 2.1
Ontario	43,058,467	25.0	50,592,586	23.8	+17.5
Manitoba	17,694,803	10.3	24,081,680	11.4	+36.1
Saskatchewan	36,905,208	21.5	50,520,529	23.8	+36.9
Alberta	37,943,736	22.0	47,934,063	22.6	+26.3
British Columbia	4,146,080	2.4	5,589,732	2.6	+34.8
Totals	**172,014,376**	**100.0**	**212,231,379**	**100.0**	**+23.4**

Sales Financing.—Instalment financing transacted by sales finance companies was higher in 1959 than in 1958, reversing a downward trend in evidence since 1955. The totals for 1959 were the highest on record.

11.—Retail Instalment Paper Purchased and Balances Outstanding, by Class of Goods, 1956-59

(Millions of dollars)

Class of Goods	Paper Purchased				Balances Outstanding Dec. 31—			
	1956	1957	1958	1959	1956	1957	1958	1959
Consumer Goods	**925**	**900**	**870**	**902**	**756**	**779**	**768**	**806**
New passenger cars	409	385	336	371	364	635	588	610
Used passenger cars	337	344	333	323	249			
Radio and television sets	58	171	201	208	47	144	180	196
Household appliances	58				47			
Furniture	21				17			
Other	42				32			
Commercial and Industrial	**323**	**291**	**265**	**356**	**279**	**288**	**257**	**344**
New commercial vehicles	112	95	70	95	98	135	111	138
Used commercial vehicles	52	53	48	59	40			
Other	159	143	147	202	141	153	146	206
Totals	**1,248**	**1,191**	**1,135**	**1,258**	**1,035**	**1,067**	**1,026**	**1,150**

Consumer Credit.—Balances outstanding on credit extended to consumers by retail stores and certain financial institutions are increasing very rapidly. Although the financial institutions included in the survey do not cover all sources of consumer credit, returns from the selected holders indicate that balances outstanding on credit extended to individuals for the purchase of consumer goods and services have more than doubled in the past eight years. The figures of Table 12 do not include credit extended for commercial purposes.

12.—Balances Outstanding on Retail Trade Credit and Loans Extended to Individuals for Non-business Purposes by Certain Financial Institutions, 1951-59

(Millions of dollars)

Year	Retail Trade Credit	Sales Finance Companies	Small Loan Companies	Chartered Banks	Credit Unions	Life Insurance Companies Policy Loans
1951	406	186	114	435	76	199
1952	552	373	148	506	94	213
1953	624	516	176	585	129	225
1954	685	492	215	612	151	240
1955	751	599	279	788	174	250
1956	798	756	356	759	219	270
1957	826	780	362	691	248	295
1958	860	768	400	842	313	304
1959	915	806	484	1,001	394	323

Accounts outstanding on the books of retailers stood at $992,500,000 at the end of 1959. This amount excludes lumber and building material dealers and farm implement dealers, two trades included in previous years, so that the results more closely approximate "consumer" credit shown in Table 13.

13.—Retail Credit 1952-59, and by Kind of Business, 1959

Period	Accounts Receivable (at end of period)		
	Instalment	Charge	Total
	$'000,000	$'000,000	$'000,000
1952	246.2	451.3	697.5
1953	287.8	483.6	771.4
1954	326.6	492.7	819.3
1955	381.8	542.8	924.6
1956	414.9	566.6	981.5
1957	485.1	529.1	1,014.2
1958[1]	489.6	447.6	937.2
1959[1]	523.8	468.7	992.5

Kind of Business	Accounts Receivable (at end of period)		
	Instalment	Charge	Total
1959	$'000,000	$'000,000	$'000,000
Department stores	250.5	63.6	314.1
Motor vehicle	16.9	77.4	94.3
Men's clothing	5.9	11.4	17.3
Family clothing	12.8	10.5	23.3
Women's clothing	3.3	11.3	14.6
Hardware	8.6	25.9	34.5
Furniture, appliance and radio	172.9	28.6	201.5
Jewellery	16.6	7.8	24.4
Grocery and combination (independent)	—	37.7	37.7
General stores	[2]	31.0[3]	31.0
Fuel	2.0	45.1	47.1
Garages and filling stations	[2]	26.2[3]	26.2
All other trades	33.4	93.1	126.5

[1] Excludes lumber and farm implement dealers. [2] Included in "Charge". [3] Includes "Instalment".

Subsection 3.—Service Establishments

Service establishments as defined in the Census of Distribution included all those places of business where the major part of gross income (annual turnover) was derived from the rendering of services as opposed to the sale of merchandise. The following types of service were covered: amusement and recreation such as motion picture theatres and producers, and bowling alleys; personal services such as laundries and dry-cleaning plants, barber shops and shoe repair shops; certain business services such as advertising agencies and window display services; repair services such as automobile repair, radio repair and watch repair; burial services; photography, commercial and portrait; hotels and tourist camps; and other services such as cold storage locker rentals and taxis.

Summary statistics of the detailed coverage in 1951 are given in the 1955 Year Book at pp. 974-977. Annual data for certain services only are included here.

Motion Picture Theatres.—The receipts of motion picture theatres increased steadily up to 1953 when they amounted to $108,603,966, but thereafter decreased each year to $75,513,974 in 1959. The number of theatres in operation has also decreased rapidly. The receipts of drive-ins, the most recent of theatre developments, reached a high point in 1959 at $7,143,925; the previous peak was in 1954.

14.—Motion Picture Theatres and Receipts, by Province, 1957-59

NOTE.—Figures cover regular and drive-in theatres only; receipts are exclusive of amusement taxes.

Province	1957		1958		1959	
	No.	$	No.	$	No.	$
Newfoundland	65	1,065,958	62	977,797	61	869,483
Prince Edward Island	13	225,195	11	2,835,004	12	2,575,232
Nova Scotia	80	2,730,072	75		67	
New Brunswick	65	2,053,586	61	1,827,544	56	1,687,007
Quebec	407	18,883,777	393	19,069,521	379	17,430,844
Ontario	526	32,346,718	506	32,436,912	477	30,533,575
Manitoba	148	3,689,372	142	3,781,246	135	3,548,461
Saskatchewan	229	4,421,336	212	4,089,415	194	3,632,488
Alberta	229	7,578,434	215	7,392,084	201	6,920,652
British Columbia, Yukon and N.W.T.	183	9,217,040	177	8,983,555	167	8,316,232
Canada	**1,945**	**82,211,488**	**1,854**	**81,393,078**	**1,749**	**75,513,974**

15.—Summary Statistics of Motion Picture Theatre Operations, 1957-59

Year and Item		Regular Theatres	Drive-in Theatres	Total
1957				
Establishments	No.	1,716	229	1,945
Receipts (excluding taxes)	$	76,486,177	5,725,311	82,211,488
Amusement taxes	$	7,815,204	520,155	8,335,359
Paid admissions	No.	146,755,828	9,945,630	156,701,458
1958				
Establishments	No.	1,622	232	1,854
Receipts (excluding taxes)	$	75,138,668	6,254,410	81,393,078
Amusement taxes	$	6,950,961	504,281	7,455,242
Paid admissions	No.	136,334,967	10,148,774	146,483,741
1959				
Establishments	No.	1,515	234	1,749
Receipts (excluding taxes)	$	68,370,049	7,143,925	75,513,974
Amusement taxes	$	5,959,857	504,546	6,464,403
Paid admissions	No.	118,633,400	10,225,995	128,859,395

Motion Picture Production.—Table 16 shows the operations of private firms in the production and printing of motion picture films and film-strips for industry, government, education, entertainment, etc. Films are also produced by government agencies but information concerning such production is, of course, not available. In addition, five firms in other business categories produced films in 1958 (one feature, seven television and 18 other non-theatrical, 288 newsreel and 21 commercial advertising) which brought them a revenue of $101,000.

16.—Summary Statistics of Motion Picture Production by Private Firms, 1952-59

Year	Firms	Employees	Salaries and Wages	Gross Revenue		
				Production	Printing and Laboratory	Other Revenue
	No.	No.	$	$	$	$
1952	30	386	1,006,918	1,331,393	1,274,137	..
1953	32	387	1,150,890	1,592,779	1,230,493	..
1954	45	478	1,549,233	2,106,131	1,456,405	1,328,021
1955	46	445	1,460,421	2,456,038	1,051,673	512,727
1956[1]	59	1,127	2,483,910	3,726,557	2,095,985	423,899
1957	58	1,216	2,758,560	4,471,710	2,978,626	469,369
1958	52	1,133	2,770,375	3,902,780	3,344,948	421,975
1959	54	1,365	3,471,347	5,085,690	3,229,240	389,480

[1] Figures from 1956 include laboratories with no motion picture production; these are not included in previous years.

Table 17 shows types of film produced by private industry, classified by major producing region, and by government agencies during 1958 and 1959. Of the total of 514 films of five minutes or longer produced by private industry in 1959, 40 television and 15 other non-theatrical films were adaptations or language versions of original films; 11 were made for other than Canadian sponsors. Of the government films, 20 theatrical shorts, 10 television and 61 other non-theatrical films of five minutes or longer were adaptations or language versions of original films and one film was produced for a sponsor from outside Canada.

Private industry and government agencies together printed 47,978,205 feet of 16mm. film in black and white, 7,802,333 feet of 16mm. film in colour, and 21,200,275 feet of 35mm. film in black and white.

17.—Private Industry and Government Motion Picture Production, by Type of Film, 1958 and 1959

Year and Type	Private Industry				Government	Private and Government
	Quebec	Ontario	Other Provinces	Total		
	No.	No.	No.	No.	No.	No.
1958						
Entertainment, Documentary and Instructional Films—						
Five Minutes or Longer—						
Theatrical features	—	2	—	2	—	2
Theatrical shorts	9	3	3	15	19	34
Non-theatrical television	104	108	—	212	55	267
Other non-theatrical	29	160	31	220	188	408
Less than Five Minutes	6	4	2	12	46	58
Publicity, News and Other Films—						
Commercial advertising for television	469	1,316	255	2,040	—	2,040
Other commercial advertising	1	8	8	17	—	17
Non-commercial advertising for television	1	45	9	55	—	55
Other non-commercial advertising	—	4	2	6	6	12
Trailers for television	6	1	1	8	1	9
Other trailers	1	4	651	656	—	656
Newsclips for television	240	7	8	255	50	305
Other newsclips	—	3	—	3	15	18
Newsreel stories and ciné-magazines for television	78	31	6	115	4	119
Other newsreel stories and ciné-magazines	105	—	—	105	52	157
Slidefilms (film-strips)—						
Silent	12	3	—	15	—	15
Sound (with a record)	—	12	—	12	—	12
Film titles	—	—	—	—	—	—
Other films	—	592	4	596	—	596
1959						
Entertainment, Documentary and Instructional Films—						
Five Minutes or Longer—						
Theatrical features	—	—	—	—	—	—
Theatrical shorts	1	1	—	2	28	30
Non-theatrical television	138	165	2	305	60	365
Other non-theatrical	46	139	22	207	179	386
Less than Five Minutes	2	35	8	45	11	56
Publicity, News and Other Films—						
Commercial advertising for television	423	1,374	367	2,164	—	2,164
Other commercial advertising	—	31	3	34	—	34
Non-commercial advertising for television	6	52	4	62	6	68
Other non-commercial advertising	—	8	6	14	12	26
Trailers for television	106	—	—	106	30	136
Other trailers	—	4	593	597	1	598
Newsclips for television	250	146	20	416	30	446
Other newsclips	—	—	—	—	2	2
Newsreel stories and ciné-magazines for television	29	79	15	123	—	123
Other newsreel stories and ciné-magazines	105	61	—	166	48	214
Slidefilms (film-strips)—						
Silent	3	8	—	11	33	44
Sound (with a record)	—	7	—	7	3	10
Film titles	3	46	7	56	1	57
Other films	—	585	—	585	—	585

Power Laundries, Dry-Cleaning and Dyeing Plants.—A record of the value of work performed by power laundries and dry-cleaning and dyeing establishments during the years 1954-59 is given in Table **18**, together with other basic data on operation.

18.—Summary Statistics of Power Laundries, Dry-Cleaning and Dyeing Plants 1954-59, and by Province 1959

Year and Province or Territory	Plants	Em-ployees	Salaries and Wages	Cost of Materials	Value of Work Performed
	Power Laundries				
	No.	No.	$	$	$
1954	299	13,754	26,635,646	4,665,671	50,513,242
1955	306	13,991	28,078,112	4,994,234	54,199,647
1956	308	14,514	30,090,800	5,738,133	58,873,728
1957	320	14,557	31,869,671	5,746,805	63,106,386
1958	322	14,258	32,761,909	6,048,982	65,350,103
Province, 1959					
Newfoundland and Prince Edward Island	5	117	199,074	57,340	528,316
Nova Scotia	13	435	777,712	150,725	1,468,118
New Brunswick	11	357	643,590	158,742	1,329,698
Quebec	77	4,210	9,756,991	2,038,661	19,363,164
Ontario	136	5,207	12,179,019	2,311,305	24,478,051
Manitoba	9	463	1,067,439	266,929	2,252,928
Saskatchewan	8	295	752,243	165,252	1,445,849
Alberta	25	932	2,311,575	526,480	5,060,623
British Columbia, Yukon and N.W.T.	46	1,938	6,176,698	982,778	12,168,756
Canada, 1959	**330**	**13,954**	**33,864,341**	**6,658,212**	**68,095,503**
	Dry-Cleaning and Dyeing Plants				
	No.	No.	$	$	$
1954	1,107	15,485	31,512,711	7,535,432	67,222,831
1955	1,205	15,909	32,873,802	7,930,290	70,733,946
1956	1,338	16,939	35,620,930	9,157,172	78,527,203
1957	1,381	16,701	38,286,440	9,710,880	84,281,509
1958	1,417	16,721	39,518,187	10,126,668	87,194,590
Province, 1959					
Newfoundland and Prince Edward Island	23	263	648,569	176,717	1,359,726
Nova Scotia	48	596	1,265,571	340,909	2,864,991
New Brunswick	37	362	702,885	191,883	1,660,356
Quebec	279	3,410	8,496,390	2,194,555	18,497,312
Ontario	649	7,685	18,760,149	4,775,228	41,532,786
Manitoba	62	1,399	3,473,264	723,787	6,567,807
Saskatchewan	92	690	1,572,048	421,897	3,771,734
Alberta	148	1,451	3,663,322	883,853	7,962,627
British Columbia, Yukon and N.W.T.	145	1,377	3,761,590	879,651	7,994,600
Canada, 1959	**1,483**	**17,233**	**42,343,788**	**10,588,480**	**92,211,939**

Advertising Agencies.—Table **19** records the growth of business done by advertising agencies during 1959 as compared with the four previous years.

19.—Summary Statistics of Advertising Agencies, 1955-59

Item		1955	1956	1957	1958	1959
Billings	$	177,240,355	204,580,522	226,083,949	237,654,038	254,145,919
Commissionable billings	$	*174,924,772*	*201,797,434*	*222,025,288*	*233,789,205*	*250,080,021*
Other	$	*2,315,583*	*2,783,088*	*4,058,661*	*3,864,833*	*4,065,898*
Gross revenue	$	27,689,654	32,203,754	35,757,762	38,073,427	41,126,958
Distribution of Billings—						
Publications	p.c.	53.3	52.6	51.6	49.3	47.8
Production, artwork, etc.	p.c.	15.1	15.3	15.1	14.4	14.7
Radio	p.c.	11.9	10.3	10.0	10.5	10.6
Television	p.c.	13.5	16.6	18.3	20.5	21.3
Other visual	p.c.	5.5	4.4	4.4	4.7	4.8
Other	p.c.	0.7	0.8	0.6	0.6	0.8

Hotels.—In 1959 there were 5,269 hotels in operation in Canada, 4,360 of them full-year hotels and 909 seasonal hotels. Table **20** shows the provincial distribution of these establishments, together with the sources of their revenue.

20.—Hotels and Their Receipts, by Source 1954-59 and by Province 1959

Year and Province	Hotels	Rooms	Receipts				
			Rooms	Meals	Beer, Wine and Liquor	All Other Sources	Total
	No.	No.	$'000	$'000	$'000	$'000	$'000
1954	5,208	148,890	94,094	70,829	204,555	36,378	405,856
1955	5,081	147,812	96,273	72,236	211,415	35,385	415,309
1956	5,067	149,625	104,453	78,169	223,398	35,811	441,831
1957	5,151	151,517	110,505	84,049	238,210	37,305	470,069
1958	5,088	151,362	111,174	87,550	243,695	37,876	480,295
Province, 1959							
Newfoundland	53	1,036	1,154	769	1,320	316	3,559
Prince Edward Island	22	650	391	316	—	60	767
Nova Scotia	123	3,520	3,063	2,646	425	564	6,698
New Brunswick	83	2,779	2,080	1,299	—	514	3,893
Quebec	1,681	43,631	31,578	26,437	67,466	9,294	134,775
Ontario	1,494	48,033	38,828	37,118	74,413	13,565	163,924
Manitoba	288	7,862	5,388	3,868	23,550	2,416	35,222
Saskatchewan	516	11,410	5,940	3,798	26,931	2,971	39,640
Alberta	450	15,136	12,566	7,285	32,722	5,565	58,138
British Columbia, Yukon and N.W.T.	559	20,668	16,408	11,603	37,260	5,596	70,867
Canada, 1959	**5,269**	**154,725**	**117,396**	**95,139**	**264,087**	**40,861**	**517,483**

Section 2.—The Marketing of Agricultural Products

A special article covering the general movement of farm-produced foods from producer to consumer, with the exception of the grain trade and livestock, appears in the 1956 Year Book, pp. 917-922. Grain and livestock marketings are covered in each edition of the Year Book; 1959-60 data on grain appear in Subsection 1 following, and 1959 figures on livestock in Subsection 2.

Subsection 1.—Grain Trade

Marketing Problems and Policies, 1959-60

Based on the combined total for the five major Canadian grains (wheat, oats, barley, rye and flaxseed), a relatively small increase occurred in production during the 1959-60 crop year, while marketings, exports, domestic disappearance and carryover stocks all registered declines from their respective 1958-59 levels. Growing conditions were variable across the country in 1959. Late June rains offset early-season drought conditions in the Prairie Provinces only to have wet weather and unseasonable snowstorms hinder harvesting operations. A large quantity of grain was harvested in tough or damp condition and Canadian Wheat Board marketing quotas (see p. 921) had to be adjusted to bring this grain forward for terminal drying. In addition, an estimated 56,000,000 bu. of wheat, 26,000,000 bu. each of oats and barley and 2,600,000 bu. of flaxseed remained in the fields over winter. Harvesting of the over-wintered grain was largely completed by early May and a satisfactory recovery was reported from most areas, although some loss of yield and grade did occur. Marketing of wheat, oats and barley continued under the compulsory crop year pools system of the Canadian Wheat Board.

According to the Canadian Wheat Board delivery quota policy for the 1959-60 crop year for western grain, an initial quota of 100 units was in effect at local delivery points at the beginning of the marketing year. Permit holders were entitled to deliver a maximum of 300 bu. of wheat or 800 bu. of oats or 500 bu. of barley or 500 bu. of rye or any combination of these grains which, when calculated on the unit basis, did not exceed 100 units. Deliveries of flaxseed were subject to an initial quota of 5 bu. per seeded acre, effective

Aug. 1. The initial unit quota was followed by general delivery quotas, based upon bushe per specified acreage and the removal of the flaxseed quota on Oct. 13, 1959. Prior to th crop year 1958-59, acreage seeded to Durum wheat was excluded from specified acreag as this crop was delivered on a quota based on seeded acreage. However, on Jan. 21 1958 the Canadian Wheat Board announced that, effective Aug. 1, 1958, acreage seede to Durum wheat would be considered part of the producer's specified acreage for quot purposes. As a result of this change, Durum wheat was deliverable only on the unit o specified acreage quotas during the crop year 1958-59. Therefore, effective Aug. 1, 1959 the specified acreage for delivery purposes consisted of each permit holder's acreage seede to wheat (including Durum), oats, barley and rye as well as summerfallow and eligibl acreage seeded to cultivated grasses and forage crops. The crop year ended with 4 stations on a 6-bu. quota and 1,962 stations on a quota of 7 bu. per specified acre. Durin the crop year a number of supplementary delivery quotas were issued on oats and barley The amount of grain marketed under these special authorizations was, of course, in addition to the quantities of oats and barley which producers chose to deliver under the initia and general quota policies.

Total marketings of the five major grains in Western Canada during 1959-60 amounte to 516,695,000 bu., representing a decrease of 6 p.c. from the comparable 1958-59 tota of 551,977,000 bu. and 13 p.c. lower than the ten-year (1948-49—1957-58) average o 595,490,000 bu. Combined exports of the same grains, including wheat flour, rolled oats and oatmeal, malt and pot and pearl barley in grain equivalent, amounted to 364,136,000 bu. compared with the 1958-59 figure of 390,000,000 bu. and the ten-year average o 404,700,000 bu. Carryover stocks of the five principal grains in all positions at July 31, 1960 were estimated at 763,500,000 bu., 6 p.c. less than the 1959 total of 810,600,000 bu. but 20 p.c. greater than the ten-year average of 635,500,000 bu.

21.—Supply and Disposition of Canadian Grain, Crop Years Ended July 31, 1959 and 1960

(Millions of bushels)

Item	Wheat	Oats	Barley	Rye	Flaxseed
Crop Year 1958-59					
Carryover, Aug. 1, 1958	639.5	154.9	118.2	10.1	5.7
Production in 1958	371.7	401.0	244.8	8.0	22.8
Imports[1]	[2]	[2]	[2]	[2]	0.1
Totals, Supply	**1,011.2**	**555.9**	**362.9**	**18.1**	**28.5**
Exports[3]	294.5	7.5	70.4	3.2	14.3
Domestic use[4]	167.6	429.4	164.4	6.9	7.7
Totals, Disposition	**462.2**	**436.9**	**234.8**	**10.2**	**22.0**
Crop Year 1959-60					
Carryover, Aug. 1, 1959	549.0	119.0	128.2	7.9	6.5
Production in 1959	413.5	417.9	225.6	8.1	17.7
Imports[1]	[2]	[2]	[2]	[2]	0.1
Totals, Supply	**962.5**	**536.9**	**353.7**	**16.1**	**24.4**
Exports[3]	277.3	6.1	63.8	4.5	12.5
Domestic use[4]	147.6	438.0	168.5	4.8	7.0
Totals, Disposition	**424.9**	**444.1**	**232.2**	**9.3**	**19.5**
Carryover, July 31, 1960	537.6	92.8	121.5	6.8	4.9

[1] Import data for wheat, oats, barley and rye, respectively, include flour in terms of wheat, rolled oats and oatmeal in terms of oats, malt and pot and pearl barley in terms of barley and rye flour in terms of rye.

[2] Fewer than 50,000 bu.

[3] Export data for wheat, oats and barley, respectively, include bagged seed wheat, wheat flour in terms of wheat, rolled oats and oatmeal in terms of oats and malt and pot and pearl barley in terms of barley.

[4] Includes human food, seed requirements, industrial use, loss in handling and animal feed.

Wheat.—*Supply and Disposition.*—Total supplies of wheat for the 1959-60 crop year amounted to 962,500,000 bu., consisting of carryover stocks of 549,000,000 bu. and production of 413,500,000 bu. This was the first season since 1954-55 that total supplies slipped below the 1,000,000,000-bu. level. Exports of wheat and flour totalled 277,300,000 bu., down 6 p.c. from the figure for 1958-59. Domestic disappearance of wheat in Canada dropped to 147,600,000 bu. from the high level of the previous year. With total disappearance amounting to 424,900,000 bu. and production to 413,500,000 bu., carryover stocks at July 31, 1960 registered a small decline of 11,400,000 bu. and amounted to 537,600,000 bu. This was the third successive year of decline of carryover stocks from the record of 733,500,000 bu. attained at July 31, 1957.

22.—Production, Imports, Exports and Domestic Use of Wheat, Crop Years Ended July 31, 1955-60

(Millions of bushels)

Item	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60
Carryover, Aug. 1	618.7	536.7	579.6	733.5	639.5	549.0
Production	332.0	519.2	573.0	385.5	371.7	413.5
Imports[1]	0.2	[2]	0.1	[2]	[2]	[2]
Totals, Supply	**950.8**	**1,055.9**	**1,152.8**	**1,119.1**	**1,011.2**	**962.5**
Exports[1]	251.9	312.3	264.4	320.3	294.5	277.3
Domestic use	162.2	164.1	154.8	159.3	167.6	147.6
Totals, Disposition	**414.1**	**476.4**	**419.2**	**479.6**	**462.2**	**424.9**
Carryover, July 31	536.7	579.6	733.5	639.5	549.0	537.6

[1] Includes bagged seed wheat and wheat flour in terms of wheat.

[2] Fewer than 50,000 bu.

Price and Marketing Arrangements.—Marketing of Western Canadian wheat during the crop year 1959-60 was again conducted by the Canadian Wheat Board on a one-year pool basis, with the initial payment remaining at $1.40 per bu. basis No. 1 Northern in store Fort William–Port Arthur or Vancouver. The ten-cent premium for No. 1 C.W. Amber Durum which prevailed during the crop years 1953-54 to 1957-58, inclusive, was discontinued at the beginning of 1958-59 and the initial payment for this grade since Aug. 1, 1958 has been the same as for No. 1 Northern. No adjustment payments on the 1958-59 deliveries were made during the crop year but on Feb. 12, 1960 an interim payment on the 1958-59 wheat pool account was announced, and this averaged 10 cents per bu. for all grades; the full amount of payment was some $36,700,000. The final payment was announced on June 15, 1960 and amounted to about $33,900,000 after deduction of net operating costs, including carrying charges, interest and administrative expenses and Prairie Farm Assistance Act levy. The average final payment amounted to the equivalent of 9.2425 cents per bu., while the total payment for No. 1 Northern, basis in store Fort William–Port Arthur or Vancouver and prior to deduction of the PFAA levy, amounted to $1.59569 per bu. No adjustment payments on 1959-60 deliveries were made during the crop year but on Feb. 14, 1961 an interim payment on the 1959-60 pool account for wheat was announced. As in the preceding year, this payment was based on 10 cents per bu. for all grades and the full amount of this payment was some $37,700,000. The final payment on the 1959-60 wheat pool had not been announced at the time of writing.

The crop year 1959-60 coincided with the first year of the fourth three-year International Wheat Agreement. In the preceding agreements, exporting countries undertook to supply guaranteed quantities to importing countries when prices reached the maximum price; and importing countries undertook to purchase guaranteed quantities from exporting countries when prices reached the minimum price. This was abandoned in favour of a continuing obligation by individual importing countries to purchase, when prices are below the maximum price, a specified percentage of their annual commercial imports. Sales under the agreement were quite widely distributed with 30 of the 34 importing countries included in the pact purchasing wheat and/or flour from Canada. The return of the United Kingdom to the International Wheat Agreement, for the first time since 1952-53, resulted in a large increase in Canadian sales under the Agreement. Purchases of Canadian wheat and flour under the terms of the International Wheat Agreement amounted to the equivalent of 235,200,000 bu. during 1959-60 and accounted for 42 p.c. of all sales by the nine exporting countries participating in the Agreement. The leading market for Canadian wheat and flour under the new Agreement was the United Kingdom with shipments to that country, at some 93,600,000 bu., accounting for 41 p.c. of the total Canadian International Wheat Agreement exports. Other major importers of Canadian wheat and wheat flour through the media of the International Wheat Agreement were: Japan, 46,800,000 bu.; the Federal Republic of Germany, 24,900,000 bu.; Belgium–Luxembourg, 10,900,000 bu.; Switzerland, 7,800,000 bu.; the Netherlands, 7,900,000 bu.; the Union of South Africa, 6,700,000 bu.; and the Philippines, 6,200,000 bu. Exports of Canadian Class II wheat were sharply reduced, and reflected the re-entry of the United Kingdom to the International Wheat Agreement. The larger importers of Class II wheat in 1959-60 were: France, 5,500,000 bu.; Poland, 4,900,000 bu.; and the United States, 3,600,000 bu.

Total domestic (commercial and farm) disappearance of wheat in 1959-60 amounted to 147,600,000 bu. compared with the 1958-59 figures of 167,600,000 bu. and the ten-year (1948-49—1957-58) average of 150,900,000 bu. The carryover at July 31, 1960 amounted to 537,600,000 bu. and represented a decline of 2 p.c. from the 1959 total of 549,000,000 bu. During the crop year 1959-60 domestic sales of all classes of wheat were made at the same prices as those prevailing for wheat sold under the International Wheat Agreement. Class II prices for all grades of wheat coincided with the IWA and domestic quotations.

Other Grains.—*Supply and Disposition.*—Data *re* supply and disposition of the major Canadian grains for the crop years 1958-59 and 1959-60 are given in Table **21**.

Price and Marketing Arrangements.—Marketing of Western Canadian oats and barley in 1958-59 and 1959-60 was again carried on through compulsory crop year pools, administered by the Canadian Wheat Board. The initial payment for oats in the 1958-59 crop year, basis No. 2 C.W., in store Fort William–Port Arthur, was 60 cents per bu., the same as in 1957-58. The initial payment for barley, basis No. 3 C.W. Six-Row in store Fort William–Port Arthur, at 96 cents per bu., was also unchanged from that of 1957-58. No interim payments were made on either grain during the crop year but final payments were announced on Apr. 1, 1960. The final payment on the 122,400,000 bu. of barley delivered to the 1958-59 pool averaged 4.35946 cents per bu. after deduction of Board operating costs, including carrying charges in country and terminal elevators and Board administrative expenses and the 1-p.c. PFAA levy. Total prices (basis in store Fort William–Port Arthur) realized by producers for representative grades after deducting carrying charges in country and terminal elevators, Board administrative costs, etc., but before deducting the 1-p.c. levy were $1.00681 per bu. for No. 3 C.W. Six-Row barley and $0.90021 per bu. for No. 1 Feed barley. Some 4,700,000 bu. of rye and 17,500,000 bu. of flaxseed were delivered by farmers in Western Canada in 1958-59.

The initial payment for oats in the 1959-60 crop year, basis No. 2 C.W., in store Fort William–Port Arthur, was 60 cents per bu., the same as in 1958-59. No interim payments were made during the crop year but the final payment was announced on Feb. 13, 1961. The final surplus for distribution was some $3,900,000 based on 23,700,000 bu. delivered to the 1959-60 pool and averaged 16.281 cents per bu. The initial payment for barley, basis No. 3 C.W. Six-Row, in store Fort William–Port Arthur, at 96 cents per bu. was also unchanged from that of 1958-59. No interim payments were made during the crop year but the final payment was announced for barley on Apr. 20, 1961. Based on the 94,900,000 bu. delivered to the 1959-60 pool and a final payment to producers of some $2,000,000, the average payment was 2.131 cents per bu. Some 4,300,000 bu. of rye and 14,000,000 bu. of flaxseed were delivered by farmers in Western Canada in 1959-60.

Miscellaneous Grain Trade Statistics

Grain Handled at Eastern Elevators.—Total receipts of the five major grains at eastern elevators in the 1959-60 crop year amounted to 350,597,000 bu., 12 p.c. lower than in 1958-59. Shipments amounted to 333,715,000 bu., 19 p.c. less than in 1958-59. Each of the five grains shared in the decline in both receipts and shipments, as indicated by the figures in Table **23**.

23.—Canadian Grain Handled at Eastern Elevators, Crop Years Ended July 31, 1956-60

Note.—Figures for the crop years ended 1922-55 are given in the corresponding table of previous Year Books beginning with the 1931 edition.

Item and Crop Year	Wheat	Oats	Barley	Rye	Flaxseed	Total Grain
	bu.	bu.	bu.	bu.	bu.	bu.
Receipts—						
1955-56	333,237,962	43,029,962	72,647,433	18,472,661	21,464,557	488,852,575
1956-57	294,264,535	48,311,339	81,483,171	2,865,332	33,507,140	460,431,517
1957-58	302,934,930	47,087,691	80,972,437	2,807,022	17,419,477	451,221,557
1958-59	287,235,822	40,935,632	55,087,986	2,468,424	14,779,910	400,507,774
1959-60	273,525,714	32,442,882	36,293,125	1,345,336	6,989,980	350,597,037
Shipments—						
1955-56	350,307,242	41,909,092	70,485,188	18,632,238	21,415,998	502,749,758
1956-57	277,177,635	48,825,598	81,434,386	3,197,075	33,261,860	443,896,554
1957-58	307,832,795	46,940,137	81,268,949	2,914,724	17,473,880	456,430,485
1958-59	294,412,290	42,689,493	56,544,772	2,551,111	14,635,190	410,832,856
1959-60	254,448,048	33,411,003	37,260,454	1,413,050	7,182,791	333,715,346

Grain Inspections.—The volume of Canadian wheat, oats, barley, rye, flaxseed, corn, buckwheat and mixed grain, together with a small quantity of United States grain, inspected by the Board of Grain Commissioners for Canada in the crop year 1959-60 amounted to 542,000,000 bu., 1 p.c. above the 1958-59 total of 534,500,000 bu. Quantities of the various grains inspected at eastern and western points, as well as inspections of soybeans, beans, peas, sample grain, screenings, sunflower seed, rapeseed, mustard seed, safflower seed, and sorghum appear in Table **24**.

24.—Quantities of Grain and Other Field Crops Inspected, Crop Years Ended July 31, 1959 and 1960

Crop	1958-59			1959-60		
	Western Division	Eastern Division	Total	Western Division	Eastern Division	Total
	bu.	bu.	bu.	bu.	bu.	bu.
Wheat	348,361,622	7,491,014	355,852,636	374,355,155	3,103,350	377,458,505
Spring wheat	*347,893,985*	—	*347,893,985*	*374,355,155*	—	*374,355,155*
Winter wheat	*467,637*	*7,491,014*	*7,958,651*	—	*3,103,350*	*3,103,350*
Oats	43,760,468	630,957	44,391,425	35,272,064	387,303	35,659,367
Barley	108,186,521	347,612	108,534,133	103,886,709	256,278	104,142,987
Rye	4,445,699	95,000	4,540,699	4,513,283	24,000	4,537,283
Flaxseed	18,578,235	—	18,578,235	16,492,234	—	16,492,234
Corn	118,789	1,846,007	1,964,796	200,126	3,157,766	3,357,892
Buckwheat	82,779	16,500	99,279	28,642	127,763	156,405
Mixed grain[1]	228,417	1,500	229,917	229,192	—	229,192
Soybeans	—	5,927,845	5,927,845	—	5,627,536	5,627,536
Beans	—	323,205	323,205	—	566,810	566,810
Peas	248,806	—	248,806	168,224	—	168,224
Sample grain[1]	—	—	—	88,719	—	88,719
Condemned grain	—	—	—	..	—	..
Screenings	—	—	—	..	—	..
Sunflower seed[2]	8,333	—	8,333	—	—	—
Rapeseed[1]	10,360,472	—	10,360,472	4,922,455	—	4,922,455
Mustard seed[1]	1,452,299	—	1,452,299	716,870	—	716,870
Safflower seed[3]	357,982	—	357,982	181,257	—	181,257
U.S.A. flaxseed	—	245,001	245,001	—	—	—
U.S.A. corn	156,703	—	156,703	—	—	—
U.S.A. sorghum	—	—	—	..	—	..
U.S.A. safflower seed[3]	34,201	—	34,201	—	—	—
Western Grain Inspected in the Eastern Division—						
Barley	...	231,000	231,000	...	318,332	318,332
Flaxseed	...	1,881,689	1,881,689	...	920,101	920,101
Buckwheat	...	47,122	47,122	...	—	—
Mixed grain	...	5,041	5,041	...	—	—
Peas	...	181,194	181,194	...	76,799	76,799
Rapeseed	...	1,172,124	1,172,124	...	39,013	39,013
Mustard seed	...	4,982	4,982	...	2,000	2,000

[1] Western grain in bushels of 50 lb. [2] In bushels of 30 lb. [3] In bushels of 45 lb.

Lake Shipments of Grain.—The 1960 navigation season opened on Apr. 10 and closed on Dec. 13. During that period, total vessel shipments of wheat, oats, barley, rye, flaxseed and buckwheat amounted to 278,700,000 bu., 3 p.c. less than the 1959 total of 286,200,000 bu. The 1959 season of navigation opened on Apr. 20 and closed on Dec. 17.

25.—Lake Shipments of Canadian Grain from Fort William-Port Arthur, Season of Navigation 1959 and 1960

Grain		1959				1960			
		To Canadian Ports	To U.S. Ports	To Overseas Direct	Total Shipments	To Canadian Ports	To U.S. Ports	To Overseas Direct	Total Shipments
Wheat	bu.	176,268,991	2,401,814	8,431,821	187,102,626	171,798,472	3,255,950	9,425,912	184,480,334
Oats	"	31,588,412	195,458	312,941	32,096,811	26,735,286	67,970	296,471	27,099,727
Barley	"	37,545,542	12,730,375	5,409,610	55,685,527	37,160,649	9,482,977	8,337,752	54,981,378
Rye	"	983,633	3,723,056	—	4,706,689	844,256	2,800,728	—	3,644,984
Flaxseed	"	4,409,315	—	2,208,114	6,617,429	5,842,653	—	2,577,945	8,420,598
Buckwheat	"	—	—	23,544	23,544	—	—	46,667	46,667
Totals	**bu.**	**250,795,893**	**19,050,703**	**16,386,030**	**286,232,626**	**242,381,316**	**15,607,625**	**20,684,747**	**278,673,688**
Sample grain	lb.	16,234,360	—	—	16,234,360	14,201,810	—	—	14,201,810
Screenings	tons	36,863	28,517	—	65,380	48,038	27,990	12,198	88,226

Wheat Flour.—Production of wheat flour in the crop year 1959-60 amounted to 40,345,000 cwt., about 1 p.c. higher than in the previous crop year. Similarly, wheat milled for flour at 91,400,000 bu. was slightly higher than during 1958-59. Of the wheat milled for flour, about 82,500,000 bu. were Western Canadian spring wheat (other than Durum), the remainder consisting of Ontario winter wheat to the amount of 5,700,000 bu., Durum 2,200,000 bu., and "other" 1,000,000 bu. Based on a daily operating potential of some 169,700 cwt., utilization of milling capacity averaged 78.0 p.c. in 1959-60 compared with 76.2 p.c. in the preceding year.

Exports of wheat flour during the 1959-60 crop year amounted to 16,074,000 cwt., only slightly lower than exports during the previous crop year.

26.—Wheat Milled for Flour, and Production and Exports of Wheat Flour, Five-Year Averages 1936-55 and Crop Years Ended July 31, 1956-60

Crop Year (Aug. 1—July 31)	Wheat Milled for Flour	Wheat Flour Production	Wheat Flour Exports	
			Amount	P.C. of Production
	'000 bu.	cwt.	cwt.	
Av. 1935-36 — 1939-40	67,845	29,405,451	9,603,941	32.7
Av. 1940-41 — 1944-45	99,705	43,908,245	23,699,546	54.0
Av. 1945-46 — 1949-50	107,330	47,011,540	25,819,721	54.9
Av. 1950-51 — 1954-55	100,446	43,847,894	21,812,041	49.7
1955-56	91,770	40,148,750	17,391,300	43.3
1956-57	85,149	37,623,446	14,582,431	38.8
1957-58	92,289	40,819,678	17,556,886	43.0
1958-59	90,143	39,826,493	16,141,267	40.5
1959-60	91,390	40,344,578	16,073,893	39.8

Subsection 2.—Livestock Marketings*

Cattle marketings through commercial channels during 1959 numbered 2,305,146, a drop of 14.8 p.c. from the 2,706,984 marketed in 1958. There was a further significant advance in quality of animals slaughtered under inspection with choice and good carcasses accounting for 45.3 p.c. of total cattle gradings compared with 40.2 p.c. in 1958. Exports of live cattle at 312,351 head were less than half of the 1958 total of 658,095; movement of feeder cattle to the United States was much lower and more cattle remained in feedlots in Canada. Calf marketings followed the same pattern as cattle with the number returned to country feedlots sharply higher than in 1958. Cattle prices were moderately higher than in 1958 and fluctuated within a narrower range; the high and low for good steers at Toronto were $26.50 and $23.64, respectively, and the year's average was $25.10 compared with $22.90 in 1958.

The most significant feature of livestock marketings in 1959 was increased output of hogs. Gradings at approved and inspected plants totalled 8,568,217 carcasses, an amount exceeded only by the record of 8,863,178 in 1944. With such volume of output, prices tended to be close to the floor price which was based on $25.00 for Grade A dressed at Toronto up to Oct. 1 and thereafter $23.65. Average quality was slightly higher with 29.5 p.c. of carcasses Grade A compared with 28.7 p.c. in 1958.

Sheep and lamb marketings were down 0.6 p.c. from the 1958 totals and prices averaged slightly lower. Gradings reflected similar quality.

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* More detailed information is available from DBS annual report *Livestock and Animal Products Statistics* (Catalogue No. 23-203), and the Department of Agriculture publication *Livestock Market Review*. Statistics of livestock and poultry are given on pp. 443-446 of this edition of the Year Book.

27.—Livestock Marketed at Stockyards and Packing Plants, by Grade, 1955-59

(Exclusive of Newfoundland)

Livestock	1955	1956	1957	1958	1959
	No.	No.	No.	No.	No.
Cattle	**1,992,818**	**2,235,443**	**2,427,669**	**2,450,306**	**2,161,628**
Steers—					
Choice	210,352	234,515	284,908	337,022	327,721
Good	225,535	250,361	271,361	273,090	228,790
Medium	190,289	208,538	204,083	154,613	150,547
Common	73,381	89,724	68,384	49,233	52,852
Heifers—					
Choice	25,666	28,773	49,900	63,752	62,043
Good	78,030	76,949	96,777	113,221	78,354
Medium	113,593	124,069	146,861	128,056	111,766
Common	74,210	92,552	79,954	64,194	64,585
Fed calves	174,017	169,635	166,933	130,090	100,020
Cows	526,290	584,402	652,428	645,889	534,581
Bulls	73,865	73,846	78,805	82,583	66,276
Feeder steers	193,067	240,552	274,585	330,665	286,144
Stock and feeder cows and heifers	34,523	61,527	52,690	77,898	77,949
Calves	**906,623**	**963,191**	**999,797**	**1,015,355**	**881,963**
Veal—					
Good and choice	275,547	244,774	257,578	213,007	157,992
Common and medium	486,092	558,063	559,886	510,561	460,184
Grass	76,508	87,726	75,505	61,883	56,606
Stocker	68,476	72,628	106,828	229,904	207,181
Hog Carcasses	**5,916,584**	**5,959,605**	**5,400,239**	**6,458,848**	**8,568,217**
"A"	1,603,070	1,696,209	1,551,536	1,852,098	2,530,973
"B"	3,071,901	3,018,166	2,738,881	3,258,296	4,138,572
"C"	568,724	577,766	535,899	630,593	873,791
"D"	28,899	30,897	21,032	28,542	69,696
Heavies	115,895	108,720	118,983	150,353	184,586
Extra heavies	84,039	85,451	93,242	116,439	111,176
Lights	117,854	123,008	75,108	84,233	198,478
Sows	274,672	266,091	218,250	283,237	388,861
Injured, ridglings and stags	51,530	53,297	47,308	55,057	72,084
Lambs and Sheep Graded Alive	**555,694**	**554,808**	**515,277**	**483,186**	**480,314**
Lambs—					
Good	340,786	328,261	307,141	305,104	311,390
Common	108,440	109,926	107,632	103,755	105,748
Bucks	43,138	49,178	37,751	18,523	14,085
Feeders	18,160	21,938	23,232	22,409	19,600
Sheep—					
Good	23,510	23,014	20,359	18,066	15,827
Common	21,660	22,491	19,162	15,329	13,664
Lamb and Sheep Carcasses	**40,337**	**49,688**	**71,441**	**76,183**	**82,115**
Lambs—					
"A"	16,055	17,616	28,119	31,664	33,267
"B"	10,345	13,050	18,395	17,693	20,026
"C"	6,724	10,281	13,175	13,957	14,965
"D"	2,354	2,621	3,204	3,588	4,126
"E"	503	705	825	930	1,059
Sheep	4,356	5,415	7,723	8,351	8,672

28.—Livestock Marketed at Public Stockyards, Packing Plants and Direct for Export, by Province, 1959

(Exclusive of Newfoundland)

Livestock	Maritime Provinces	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
	No.	No.	No.	No.	No.	No.	No.	No.
Cattle	**34,834**	**106,309**	**680,725**	**210,710**	**486,448**	**719,156**	**66,964**	**2,305,146**
Totals to stockyards	4,092	61,734	356,201	140,215	327,458	453,490	15,811	1,359,001
Direct to packers	29,106	43,626	288,378	70,056	107,739	230,788	32,934	802,627
Direct for export	1,296	949	36,146	225	28,030	18,653	12,423	97,722
Country points in other provinces[1]	340	—	—	214	23,221	16,225	5,796	45,796
Calves	**20,299**	**297,005**	**216,769**	88,751	**142,676**	**167,318**	**10,601**	**943,419**
Totals to stockyards	6,353	109,864	95,630	55,467	110,859	102,347	4,777	485,297
Direct to packers	13,138	181,703	104,868	32,998	12,754	47,301	3,904	396,666
Direct for export	399	5,438	16,271	185	2,926	1,232	89	26,540
Country points in other provinces[1]	409	—	—	101	16,137	16,438	1,831	34,916

For footnote, see end of table.

28.—Livestock Marketed at Public Stockyards, Packing Plants and Direct for Export, by Province, 1959—concluded

Livestock	Maritime Provinces	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
	No.	No.	No.	No.	No.	No.	No.	No.
Hogs	**180,672**	**1,503,478**	**3,013,590**	**653,685**	**908,360**	**2,265,892**	**45,383**	**8,571,060**
Totals to stockyards	—	101,964	298,614	109,957	115,336	263,680	93	889,644
Direct to packers	180,396	1,401,081	2,713,370	543,725	793,007	2,001,750	45,244	7,678,573
Direct for export	276	433	1,606	3	17	462	46	2,843
Sheep and Lambs	**41,759**	**109,853**	**153,091**	**32,321**	**47,751**	**174,696**	**25,163**	**584,634**
Totals to stockyards	3,420	19,796	66,593	10,981	19,946	57,897	1,370	180,003
Direct to packers	38,255	90,031	85,343	20,993	19,027	105,413	23,364	382,426
Direct for export	84	26	1,155	257	1,632	7,082	62	10,298
Country points in other provinces[1]	—	—	—	90	7,146	4,304	367	11,907
Total Inward Movement—[2]								
Cattle	115	1,963	163,140	16,770	47,920	131,083	268	361,259
Calves	46	487	83,292	2,993	12,581	56,197	187	155,783
Sheep and lambs	221	52	16,252	2,084	1,925	12,797	698	34,029

[1] Livestock billed through stockyards to country points outside province of origin. [2] Movement to farms from stockyards and plants on through-billings from country points in one province to country points in another province.

Section 3.—Warehousing and Cold Storage*

Warehousing ranks high among the means by which the utilities of 'place', 'time' and 'possession' are added to the products of industry. Its importance has been emphasized in modern times because of the introduction of cold storage methods in the conservation of perishable foods.

The presentation of warehousing statistics is difficult because it is not an easy matter to define clearly what are to be regarded as stocks in storage. In these days of complicated business relationships and especially since the rise of the department store and chain store as characteristic institutions in the retail merchandising field, it often happens that warehousing is carried on in close relationship with merchandising. However, if the strict economic definition of warehousing is adopted, then this term should be restricted to those facilities that add the utility of 'time' to the 'form' utilities that are the product of the extraction and manufacturing industries. Because the warehouses established in close connection with retail trade are more often than not convenient places for the temporary storage of goods in process of transfer from the manufacturer or wholesaler to the consumer, they are not, in the strict economic sense, services that add the utility of 'time' to commodities already worked up into 'form'. As some clear line must be drawn and because separate statistics of the latter branch of storage are not available, it is considered practicable to interpret warehousing in this way.

The statistics of warehousing are gathered together under this Section. Subsection 1 presents statistics of the licensed storage of grain. Subsection 2 deals with cold storage facilities without which perishable foods such as meats, dairy products, fish and fruits could not be exchanged or distributed on a wide scale; it includes also figures of stocks of food on hand. Subsection 3 deals with the storage of petroleum and its products, and Subsection 4 with public warehouses and customs warehouses. The facilities that specialize in the storage of tobacco and alcoholic liquors are analysed in Subsection 5. These bonded warehouses, as they are called, are under the strict surveillance of Federal Government excise officers, who supervise all movements into and from such places of storage.

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* Information supplied by various Divisions of the Departments of Agriculture, Fisheries, Mines and Technical Surveys, and National Revenue and of the Dominion Bureau of Statistics.

Subsection 1.—Licensed Grain Storage

Total grain storage capacity in Canada, licensed under the provisions of the Canada Grain Act by the Board of Grain Commissioners for Canada, amounted to 648,200,000 bu. at Dec. 1, 1959, an increase of 9,000,000 bu. over the level of Dec. 1, 1958. Some 4,639,000 bu. of this increase occurred in western country elevators, 3,540,000 bu. in eastern elevators and 1,000,000 bu. in semi-public terminal elevators. Licensed grain storage capacity in Canada had reached a peak of 603,000,000 bu. at Dec. 1, 1943 but, following the disposal of heavy wartime stocks, declined to 482,400,000 bu. at Dec. 1, 1947. Since that date capacity has increased each year.

Reflecting the cumulative effects of five bumper crops in the six-year period 1951-56, which was only partially offset by reduced production in the three years 1957-59, the pressure on Canada's grain handling and storage facilities remained great. In addition, considerable difficulty was experienced in harvesting the 1959 grain crops in the Prairie Provinces and large amounts of wheat, oats and barley were threshed tough and damp. This situation placed additional strain on the grain handling facilities as farm marketing quotas had to be adjusted to bring forward tough and damp grain for terminal drying. Farmers' marketings of western grain are governed to a considerable extent by space made available in country elevators as grain moves forward into domestic and export channels. As indicated in Table **29**, there was a decline in the proportion of occupied elevator space from 69.1 p.c. at Dec. 2 to 65.2 p.c. at Mar. 30 in the 1959-60 crop year but by July 31, the proportion had increased to 78.3 p.c.

29.—Licensed Grain Storage Capacity and Grain in Store, Crop Years 1958-59 and 1959-60

Crop Year and Storage Position	Licensed Storage Capacity	Canadian Grain in Licensed Storage			Proportion of Licensed Storage Capacity Occupied		
	Dec. 1, 1958	Dec. 3, 1958	Apr. 1, 1959	July 31, 1959	Dec. 3, 1958	Apr. 1, 1959	July 31, 1959
	'000 bu.	'000 bu.	'000 bu.	'000 bu.	p.c.	p.c.	p.c.
1958-59							
Western country	386,588	274,733	290,256	331,886	71.1	75.1	85.8
Interior, private and mill	20,742	10,371	11,013	10,271	50.0	53.1	49.5
Interior, terminals	18,100	14,522	14,623	13,767	80.2	80.8	76.1
Churchill	5,000	4,957	4,957	4,634	99.1	99.1	92.7
Pacific coast	23,906	17,077	17,781	12,728	71.4	74.4	53.2
Fort William–Port Arthur	90,517	50,492	82,523	64,285	55.8	91.2	71.0
Georgian Bay and upper Lake ports	36,566	32,849	8,430	29,267	89.8	23.1	80.0
Lower Lake and upper St. Lawrence ports	20,720	13,957	8,783	11,187	67.4	42.4	54.0
Lower St. Lawrence ports	29,712	25,088	13,836	20,188	84.4	46.6	67.9
Maritime ports (excl. Newfoundland)	7,229	6,291	2,305	1,600	87.0	31.9	22.1
Totals, 1958-59	**639,082**	**450,338**	**454,507**	**499,812**	**70.5**	**71.1**	**78.2**
	Dec. 1, 1959	Dec. 2, 1959	Mar. 30, 1960	July 31, 1960	Dec. 2, 1959	Mar. 30, 1960	July 31, 1960
	'000 bu.	'000 bu.	'000 bu.	'000 bu.	p.c.	p.c.	p.c.
1959-60							
Western country	391,228	271,578	264,387	322,038	69.4	67.6	82.3
Interior, private and mill	20,707	9,735	10,336	9,902	47.0	49.9	47.8
Interior, terminals	18,100	13,975	12,812	12,509	77.2	70.8	69.1
Churchill	5,000	4,905	4,905	4,757	98.1	98.1	95.1
Pacific coast	24,906	15,563	13,887	11,802	62.5	55.8	47.4
Fort William–Port Arthur	90,517	57,062	73,807	67,189	63.0	81.5	74.2
Georgian Bay and upper Lake ports	36,566	28,661	13,898	31,065	78.4	38.0	85.0
Lower Lake and upper St. Lawrence ports	20,660	13,253	9,095	14,819	64.1	44.0	71.7
Lower St. Lawrence ports	33,312	28,017	14,987	28,502	84.1	45.0	85.6
Maritime ports (excl. Newfoundland)	7,229	5,456	4,460	4,718	75.5	61.7	65.3
Totals, 1959-60	**648,226**	**448,206**	**422,574**	**507,301**	**69.1**	**65.2**	**78.3**

Subsection 2.—Cold Storage and Storage of Foods

Cold Storage Warehouses.—Under the Cold Storage Act (RSC 1952, c. 52), as amended (RSC 1952, c. 313), subsidies are granted by the Federal Government to encourage the construction and equipment of cold storage warehouses open to the public. The Act is administered by the Department of Agriculture.

There are five classifications of cold storage warehouses in Canada: (1) public warehouses that store foods and food products and where the entire space is open to the public; (2) semi-public, or those that store foods and where part of the space is retained for the products of the owner and the remainder is available to the public; (3) private, or those that store foods and food products and allot no space to the public, a classification that includes refrigerated space in connection with abattoirs, creameries, dairies, cheese factories and wholesale and retail distributing warehouses; (4) locker plant, where the total space is occupied by lockers for rental to the public and where food and food products may be cut, processed, chilled and frozen for storage in lockers; and (5) bait depots, where space is used solely or principally for the freezing and storing of bait for the use of fishermen.

No hard and fast rule can be laid down for distinguishing between public and private warehouses. In general those owned and operated by firms trading in the goods stored in the warehouse are considered as private, although most of these places rent space to the public when it is not required for their own purposes.

The figures in Tables **30** and **31**, compiled by the Department of Agriculture, give some idea of the cold storage warehouse capacity in Canada, but it must be explained that it is not possible to secure completely accurate information on this subject and that the figures are approximations only.

30.—Cold Storage Warehouses, by Province, Year Ended Mar 31, 1960

NOTE.—Figures are approximations only.

Province	Subsidized Public Warehouses				All Warehouses	
	No.	Refrigerated Space	Cost	Total Subsidy	No.	Refrigerated Space
		cu. ft.	$	$		cu. ft.
Newfoundland	2	44,078	201,960	67,320	71	2,481,809
Prince Edward Island	12	358,037	351,409	110,300	24	599,204
Nova Scotia	27	5,430,089	4,544,841	1,372,014	194	7,445,051
New Brunswick	14	2,048,829	2,055,295	650,773	94	3,146,413
Quebec	61	6,252,527	6,199,999	1,976,678	396	26,248,676
Ontario	91	14,358,311	12,057,127	3,786,515	966	43,351,200
Manitoba	12	3,187,141	2,278,307	687,443	297	11,448,334
Saskatchewan	23	1,172,381	1,762,526	562,939	325	5,618,539
Alberta	9	1,447,845	2,153,657	701,608	307	8,548,136
British Columbia	76	24,001,110	10,269,898	3,109,979	411	36,000,346
Totals	**327**	**58,300,348**	**41,875,019**	**13,025,569**	**3,085**	**144,887,708**

31.—Cold Storage Warehouses and Refrigerated Space, by Province, as at Mar. 31, 1960

Note.—Figures are subject to revision.

Class of Storage		Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Canada[1]
Public and Semi-public—												
Warehouses	No.	3	13	36	23	148	223	16	13	19	85	579
Refrigerated Space—												
0° to 30°	cu. ft.	2,400	31,029	407,075	88,556	3,878,559	904,605	6,060	189,141	122,238	675,369	6,305,032
0° to −10°	"	251,100	239,392	1,033,611	1,381,445	4,513,171	10,708,632	4,000,770	540,183	1,236,722	4,239,800	28,144,826
Above 30°	"	9,480	45,298	3,676,740	888,690	8,473,504	13,922,552	1,139,772	468,458	356,847	21,637,315	50,618,656
Locker	"	—	24,618	55,981	65,967	38,074	815,784	39,480	64,278	61,334	144,592	1,310,108
Private—												
Warehouses	No.	41	10	140	71	237	535	194	113	165	232	1,738
Refrigerated Space—												
0° to 30°	cu. ft.	232,135	72,926	444,845	63,198	720,506	735,500	386,168	187,693	273,669	869,521	3,986,161
0° to −10°	"	1,366,683	36,693	618,007	371,800	922,959	4,396,490	726,912	598,857	1,206,155	2,091,750	12,336,306
Above 30°	"	192,291	142,385	1,151,695	282,417	7,653,149	9,976,694	4,356,861	2,032,398	4,278,640	5,198,662	35,265,192
Locker	"	1,000	5,898	—	4,340	—	96,679	5,763	1,020	41,592	37,420	193,712
Bait Depots—												
Warehouses	No.	27	1	17	—	—	—	—	—	—	—	45
Refrigerated Space—												
0° to 30°	cu. ft.	361,102	—	47,173	—	—	—	—	—	—	—	408,275
0° to −10°	"	62,168	965	3,764	—	—	—	—	—	—	—	66,897
Above 30°	"	750	—	—	—	—	—	—	—	—	—	750
Locker	"	2,700	—	—	—	—	—	—	—	—	—	2,700
Locker Plants—												
Warehouses	No.	—	—	1	—	11	208	87	199	123	94	723
Refrigerated Space—												
0° to 30°	cu. ft.	—	—	2,160	—	8,600	42,455	245,913	14,750	8,350	33,998	356,226
0° to −10°	"	—	—	—	—	4,150	270,085	49,032	62,452	46,990	67,665	500,374
Above 30°	"	—	—	—	—	5,846	290,078	155,367	354,009	226,273	162,613	1,194,186
Locker	"	—	—	4,000	—	30,158	1,191,646	336,236	1,105,300	689,326	841,641	4,198,307
Totals, Warehouses	**No.**	**71**	**24**	**194**	**94**	**396**	**966**	**297**	**325**	**307**	**411**	**3,085**
Totals, Refrigerated Space	**cu. ft.**	**2,481,809**	**599,204**	**7,445,051**	**3,146,413**	**26,248,676**	**43,351,200**	**11,448,334**	**5,618,539**	**8,548,136**	**36,000,346**	**144,887,708**

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[1] Exclusive of the Yukon and Northwest Territories.

32.—Stocks of Food Commodities in Dairy Factories and Cold Storage Warehouses, as at Jan 1, 1959 and 1960

Year and Item		As at Jan. 1	Minimum during Year	Date at which Minimum Occurred	Maximum during Year	Date at which Maximum Occurred	Twelve-Month Average
1959							
Butter, creamery, dairy and whey[1]	'000 lb.	93,843	61,797	Apr. 1	134,153	Oct. 1	96,442
Cheese, cheddar[1]	"	46,774	32,263	May 1	56,369	Oct. 1	44,322
Evaporated whole milk	"	47,781	19,671	Apr. 1	66,853	Oct. 1	45,145
Skim milk powder	"	77,313	21,741	Dec. 1	77,313	Jan. 1	60,106
Eggs, shell[1]	'000 cases	101	53	Dec. 1	398	June 1	225
Eggs, frozen	'000 lb.	6,207	5,549	Mar. 1	9,911	Sept. 1	7,329
Poultry, dressed and eviscerated[1]	"	46,818	17,964	Aug. 1	47,315	Dec. 1	32,001
Pork, fresh	"	6,901	6,741	Feb. 1	8,766	Apr. 1	7,450
Pork, frozen	"	32,232	32,232	Jan. 1	96,886	May 1	65,686
Pork, cured and in cure	"	8,461	8,461	Jan. 1	11,514	Dec. 1	9,915
Lard	"	8,608	4,285	Nov. 1	10,444	May 1	7,370
Beef, fresh	"	10,849	10,849	Jan. 1	14,415	Nov. 1	12,742
Beef, frozen	"	21,451	14,269	Oct. 1	21,451	Jan. 1	16,655
Beef, cured, etc.	"	566	385	Mar. 1	610	Aug. 1	518
Veal	"	4,772	2,700	Mar. 1	5,304	Dec. 1	4,032
Mutton and lamb	"	6,310	2,570	May 1	6,310	Jan. 1	3,751
Apples, fresh	'000 bu.	6,351	595	June 1	8,281	Nov. 1	2,793
Fruit, frozen	'000 lb.	37,011	23,559	June 1	37,011	Jan. 1	32,037
Fruit, in preservatives	"	48,046	31,858	June 1	48,046	Jan. 1	41,500
Potatoes	'000 cwt.	14,227	2,051	June 1	16,773	Nov. 1	6,573
1960							
Butter, creamery, dairy and whey[1]	'000 lb.	105,964	76,767	Apr. 1	139,366	Oct. 1	109,450
Cheese, cheddar[1]	"	52,532	42,432	May 1	64,550	Oct. 1	52,905
Evaporated whole milk	"	44,598	11,470	Apr. 1	64,247	Sept. 1	40,976
Skim milk powder	"	21,942	15,644	Apr. 1	30,982	Aug. 1	23,650
Eggs, shell[1]	'000 cases	81	43	Nov. 1	195	June 1	111
Eggs, frozen	'000 lb.	4,639	4,639	Jan. 1	8,775	Sept. 1	6,732
Poultry, dressed and eviscerated[1]	"	26,185	12,405	Aug. 1	48,978	Dec. 1	22,442
Pork, fresh	"	8,121	4,648	Sept. 1	8,121	Jan. 1	5,867
Pork, frozen	"	43,534	9,993	Oct. 1	50,205	May 1	33,897
Pork, cured and in cure	"	6,925	6,925	Jan. 1	11,228	Apr. 1	8,619
Lard	"	7,663	3,833	Nov. 1	7,745	June 1	6,087
Beef, fresh	"	11,658	11,658	Jan. 1	14,729	Oct. 1	13,344
Beef, frozen	"	17,154	12,788	Sept. 1	17,154	Jan. 1	15,112
Beef, cured, etc.	"	385	300	Nov. 1	440	June 1	382
Veal	"	4,126	3,226	Mar. 1	6,565	Nov. 1	4,673
Mutton and lamb	"	3,037	780	June 1	3,290	Dec. 1	1,936
Apples, fresh	'000 bu.	5,237	233	June 1	8,197	Nov. 1	2,317
Fruit, frozen	'000 lb.	31,806	20,221	June 1	36,769	Sept. 1	29,417
Fruit, in preservatives	"	12,218	7,908	Aug. 1	12,218	Jan. 1	9,839
Potatoes	'000 cwt.	12,056	1,947	June 1	17,531	Nov. 1	6,102

[1] Includes amounts in transit.

Cold Storage Holdings of Fish.—Stocks of frozen fish held in Canada during 1960 followed the usual seasonal trend. Normally, stocks decrease gradually during the early months of the year and reach a low point at the beginning of April or May when fishing activity is at its lowest ebb; during subsequent months they increase and reach a peak at the beginning of October or November.

In 1960, stocks were on the average slightly higher than in 1959. The increase is attributable almost exclusively to larger holdings of cod fillets and blocks. The demand for Canadian fresh and frozen groundfish fillets, particularly cod fillets, in the United States had begun to weaken early in 1959 as a result of heavy imports from some European countries. The situation improved during the latter part of 1960, United States imports from

Iceland and Norway having declined appreciably in the interim. Stocks of cod fillets and blocks began to pile up during the last few months of 1959 and were generally higher during 1960 than in the previous year. At the end of 1960, however, the situation had improved and stocks were lower than a year before. Because of reduced production, holdings of both Pacific halibut, dressed, and Pacific salmon, dressed and filleted, were on the average lower than in 1959.

33.—Storage Stocks of Fish, by Month and by Type, 1958, 1959 and 1960

NOTE.—Stock totals are as at the beginning of each month; stocks of individual products are monthly averages.

Month	1958	1959	1960p	Group and Product	1958	1959	1960p
	'000,000 lb.				'000,000 lb.		
Jan. 1	42.4	47.4	54.3	**Frozen, Fresh Seafish**[1]	**32.7**	**42.0**	**47.0**
Feb. 1	33.1	38.5	49.0	Salmon, Pacific, dressed and filleted	5.7	6.1	4.2
Mar. 1	24.2	30.0	41.9	Halibut, Pacific, dressed	6.7	8.2	7.6
Apr. 1	19.0	26.1	30.7	Herring, Atlantic, round	0.9	0.5	0.4
May 1	20.6	29.4	32.2	Cod, Atlantic, filleted	5.0	9.4	13.8
June 1	25.6	35.9	41.7	**Frozen, Freshwater Fish**[1]	**5.5**	**6.0**	**5.2**
July 1	41.6	50.5	52.8	Whitefish, dressed and filleted	2.0	2.1	1.6
Aug. 1	49.1	62.4	65.5	Tullibee, round or dressed	0.3	0.2	0.2
Sept. 1	55.9	71.3	72.1	Pickerel (yellow) dressed and filleted	0.3	0.2	0.7
Oct. 1	55.3	70.9	73.7	**Frozen, Smoked Fish**[1]	**1.7**	**1.7**	**1.6**
Nov. 1	57.0	69.8	69.6	Cod, Atlantic, filleted	0.7	0.8	0.8
Dec. 1	54.7	63.9	62.5	Sea herring, dressed	0.6	0.5	0.5
				Haddock, dressed	0.2	0.2	0.2
Averages	**39.9**	**49.7**	**53.8**	**Averages**	**39.9**	**49.7**	**53.8**

[1] Includes other items not listed.

Cold Storage of Dairy Products.—Cold storage facilities are a necessary adjunct in the manufacture of dairy products, most of which are perishable in varying degrees. All creameries have facilities for the storing of butter, the size and type of storage depending on the size of the creamery. If the butter produced at small country plants is not printed for immediate sale, the butter solids are disposed of or are transported to larger creameries where better refrigeration is available or to private or public cold storages in the larger urban centres. Temperature control is important in the curing process for cheese as well as in the prevention of deterioration. Most cheese factories are equipped with mechanical refrigeration and are required to have storage capacity for 17 days' produce during the period of maximum manufacture. The cheese is then transferred to central warehouses. As soon as milk is bottled it is placed in storage and held until delivery. Dry whole milk and other dried milk products containing fat are usually stored in cool air chambers to prevent rancidity.

Cold Storage of Apples and Potatoes.—Cold storage space for apples in Canada has increased rapidly in recent years as a result of the promotion of orderly marketing, the extension of the marketing season generally, and increased production in some areas. This trend has followed the curtailment in shipments to traditional markets in the United Kingdom and other European countries after World War II. There has been an increase recently in the construction of both privately and co-operatively owned storages, particularly in the Province of Quebec.

Potatoes are not ordinarily held in cold storage but recently there has been an increase in the construction of potato storage houses and warehouses in the commercial producing areas.

Subsection 3.—Storage of Petroleum and Petroleum Products

Bulk storage plants for petroleum and petroleum products are established at convenient distributing centres, often on a waterfront so that full advantage may be taken of the lower cost of water-borne traffic. From these centres the goods are transferred by boat, rail or truck to smaller distributing depots or directly to retail outlets. The principal refining and distributing centres are located at or near Halifax, Saint John, Quebec, Montreal, Ottawa, Toronto, Sarnia, Fort William, Regina, Calgary, Turner Valley, Edmonton and Vancouver.

34.—Petroleum and Petroleum Products in Storage as at Jan. 1, 1958-60

(Barrels of 35 Imperial gallons)

Product	1958	1959	1960
	bbl.	bbl.	bbl.
Crude oil	..	..	9,001,851[1]
Natural gas liquids	..	..	32,689[1]
Liquefied petroleum gas	77,010	179,931	277,377
Petrochemical feed stocks	26,771	18,130	41,893
Naphtha specialties	300,767	337,070	407,034
Aviation gasoline	1,631,764	1,453,608	1,430,675
Motor gasoline	18,150,366	16,855,788	19,178,603
Aviation turbo-fuel	740,460	958,785	1,237,957
Kerosene, stove oil and tractor fuel	5,028,353	4,872,923	5,439,609
Diesel fuel	6,166,138	5,040,179	6,096,810
Light fuel oil (Nos. 2 and 3)	16,337,101	14,670,133	17,284,700
Heavy fuel oil (Nos. 4, 5 and 6)	6,348,591	5,029,765	5,762,987
Asphalt	1,323,910	979,101	1,350,151
Coke	24,479	38,037	56,858
Lubricating oil and grease	1,579,159	1,530,027	1,503,929
Wax and candles	19,480	26,009	24,119
Still gas	1,448	700	570
Unfinished products	5,125,988	5,000,504	5,442,328

[1] At refineries only.

Subsection 4.—General Warehousing

Public Warehouses.—The summary statistics of the warehousing industry in Canada presented in Table 35 cover the operations of the majority of firms offering warehousing and storage facilities to the public. Associations and organizations such as co-operatives operating warehouses or storages for their own members are not included nor are packing houses and other firms operating storage facilities in connection with their respective businesses. Small food lockers are not included except where they may be part of a general warehousing business.

Many public warehousing companies also operate a local moving and cartage service and others a motor-carrier business, involving long-distance moving. Commencing with 1958, firms earning greater revenue from long-distance moving than from the warehousing business are included in the *Motor Carrier—Freight* report. Prior to 1958 there was some duplication between the warehousing and motor freight carrier series where firms were involved in both industries. The 1959 statistics given in Table 35 include returns from 204 firms which appear to belong primarily to the warehousing industry.

35.—Summary Statistics of the Warehousing Industry, 1956-59

Item		1956	1957	1958	1959
Companies reporting	No.	227	234	213	204
Investment in land, warehouses, etc.	$	62,720,201	67,205,471	63,958,833	68,834,854
Warehousing Facilities—					
Dry storage (net)	cu. ft.	79,948,180	82,025,294	75,295,788	76,995,721
Refrigerated storage	"	28,324,864	28,397,711	30,960,505	32,550,680
Revenue—					
Storage	$	15,758,690	16,800,663	16,064,998	17,841,405
Cartage and moving	$	18,973,054	20,927,270	13,051,872	15,499,509
Miscellaneous	$	14,137,787	15,487,075	11,359,192	14,748,085
Total Revenue	$	48,869,531	53,215,008	40,476,062	48,088,999
Operating expenses	$	43,799,167	48,462,389	36,624,592	43,262,593
Net Operating Revenue	$	5,070,364	4,752,619	3,851,470	4,826,406
Salaried employees	No.	1,885	1,890	1,516	1,631
Wage-Earners—					
Regular	No.	6,294	5,411	3,942	4,579
Casual	"	1,112	1,212	1,104	1,045
Salaries and wages paid	$	22,466,569	25,002,080	18,813,722	22,880,612
Motor Vehicles—					
Trucks	No.	1,850	1,922	1,428	1,570
Tractors	"	633	587	329	353
Semi-trailers	"	654	573	327	438
Trailers	"	77	117	100	39

Customs Warehouses.—Warehouses for the storage of in-bond goods are known as customs warehouses and are divided into three categories. (1) Those occupied by the Federal Government, some of which are used for examination and appraisal of imported goods and others, known as Queen's warehouses, used for the storage of unclaimed, abandoned, seized or forfeited goods. (2) Bonded warehouses operated and owned by a person other than the Crown and used for the storage and safekeeping of imported goods after entry and conforming to one of the following: (*a*) an entire building or part of a building completely separated from the remainder of the building by adequate partitions or walls and devoted to the safekeeping of imported goods consigned or sold to the warehouse keeper or other persons; (*b*) a yard, shed or other suitable enclosure or area devoted to the safekeeping of imported goods too large or too heavy for lodging in a Class 2(*a*) warehouse; and (*c*) a farm, yard or other suitable enclosure devoted to the safekeeping of horses, sheep and cattle for feeding and pasturage. (3) Sufferance warehouses for the landing, storage, safekeeping, transfer, examination, delivery and forwarding of imported goods before entry and conforming to one of the following: (*a*) a warehouse operated or provided by railway, express, airline and shipping companies; (*b*) warehouses for in-bond goods arriving by commercial motor vehicle; and (*c*) all sufferance warehouses not described under (*a*) or (*b*).

Subsection 5.—Bonded Warehousing and Storage of Wines

Bonded Warehousing.—The Excise Duty Branch of the Department of National Revenue considers any premises licensed under the Excise Act to be a warehouse, whether for storage of raw materials to produce finished tobacco or cigar products or for spirits or malt used for brewing. Practically the total production of spirits is placed in bonded warehouses and only a small part of the output of beer is retained in storage. Wine, unlike spirits and beer, is not secured under bond. All imports of alcoholic beverages must go through bonded warehouses before being released to Provincial Liquor Commissions or Boards, or other agencies authorized by the Commissions or Boards to take alcoholic beverages out of bond. Similarly, tobacco, cigars and cigarettes that are not stamped and duty paid are secured in bond. In addition to these warehouses, there are those in which no manufacturing or production is carried on but which are used solely for the storage of goods upon which duty has not been paid. Goods are stored in these warehouses usually for the purpose of rapid distribution and for delivery as ships' stores.

Table **36** shows the quantities of distilled liquor, tobacco, cigars and cigarettes in bond in recent years. In addition, the year-end inventories of beer in breweries amount to some 30,000,000 gal.

36.—Distilled Liquor, Tobacco, Cigars and Cigarettes in Bond, Quarterly 1956-60

Item and Quarter		1956	1957	1958	1959	1960
Distilled Liquor—						
March	'000 pf. gal.	110,084	117,567	123,289	126,052	135,656
June	"	112,589	120,613	125,661	130,082	137,554
September	"	112,875	120,058	125,579	130,907	137,743
December	"	110,651	120,371	126,057	132,054	139,070
Tobacco, Unmanufactured—						
March	'000 lb.	213,359	199,716	197,282	204,836	224,662
June	"	187,570	179,079	187,174	213,529	191,142
September	"	157,964	148,881	162,040	179,611	158,357
December	"	155,715	120,186	150,965	178,078	183,979
Cigars—						
March	'000	2,521	2,986	2,727	1,977	1,300
June	"	1,336	1,170	1,150	349	156
September	"	1,145	1,126	980	237	195
December	"	727	1,194	530	119	124
Cigarettes at 3 lb. or under—[1]						
March	'000	3,967	8,656	4,410	5,195	9,505
June	"	4,966	3,247	5,341	—	3,235
September	"	3,812	11,440	5,531	3,139	6,805
December	"	2,690	8,419	6,696	5,738	3,443

[1] Excludes Newfoundland.

Beverage spirits, as shown in Table **37**, refer to spirits released for consumption but not to industrial alcohol; malt beer does not include beer made from duty-free malt; malt used is the total malt used to produce the malt beer; tobacco includes all types of manufactured tobacco products and snuff.

37.—Beverage Spirits, Malt Beer, Malt, Tobacco and Tobacco Products Taken Out of Bond and Destined for Consumption, 1951-60

Year	Beverage Spirits	Malt Beer[1]	Malt Used	Cigars	Cigarettes	Tobacco
	pf. gal.	gal.	lb.	'000	'000	'000 lb.
1951	10,801,225	179,648,482	353,130,285	169,136	15,667,266	30,177
1952	11,171,830	195,780,017	378,764,899	200,263	17,848,325	33,637
1953	12,445,166	202,897,996	381,508,232	235,587	21,001,492	28,732
1954	11,946,178	[2]	370,328,106	244,248	22,113,102	26,846
1955	11,847,649	[2]	372,693,929	252,633	24,576,087	26,000
1956	13,733,393	[2]	386,064,673	255.570	26,997,705	23,272
1957	14,544,797	[2]	404,697,177	292,650	30,149,746	22,338
1958	15,777,160	[2]	385,628,053	323,124	32,404,186	23,332
1959	16,173,426	[2]	399,626,852	311,277	33,822,125	23,911
1960	..	[2]	417,348,530	332,324	34,289,354	23,988

[1] Duty has been paid herein on the malt.

[2] Duty solely on gallonage basis since 1954.

Storage of Wines.—The wine industry is confined to a few localities such as the Niagara Peninsula in Ontario and the Okanagan Valley in British Columbia. Firms manufacturing native wines are not bonded, as far as the Federal Government is concerned, nor is wine in storage for maturing placed in bond. The only goods warehoused in bond in connection with wineries are sugar supplies and supplies of grape spirit distilled by the distilleries and held by the wineries for fortifying wines.

38.—Native Wine Produced and Placed in Storage for Maturing, 1951-59

Year	Ontario		Other Provinces		Total	
	gal.	$	gal.	$	gal.	$
1951	4,182,767	2,729,147	494,288	407,849	4,677,055	3,136,996
1952	4,383,358	2,764,750	552,694	440,864	4,936,052	3,205,614
1953	3,562,498	2,237,316	572,692	430,574	4,135,190	2,667,890
1954	4,414,981	2,688,060	640,183	510,464	5,055,164	3,198,524
1955	5,059,418	3,059,868	624,670	480,491	5,684,088	3,540,359
1956	4,945,429	2,880,176	528,447	415,763	5,473,876	3,295,939
1957	4,746,998	3,151,865	656,510	437,243	5,403,508	3,589,108
1958	6,593,607	3,810,707	822,398	635,609	7,416,005	4,446,316
1959	6,078,805	3,623,075	954,626	754,565	7,033,431	4,377,640

Section 4.—Co-operative Organizations

Marketing and purchasing co-operatives account for the larger part of Canadian co-operative business and continue to play an important role in the marketing of agricultural products and in the purchasing of farm supplies. Co-operatives in these categories reported a membership of 1,290,462 during 1958-59, a small decrease from the previous year. There is some duplication in this number since many individuals belong to more than one co-operative.

The number of co-operative associations has declined slightly each year since 1956, mostly through amalgamations, but the number of places of business has increased substantially. The total business for these associations amounted to $1,315,167,000 in 1958-59, an increase of 7 p.c. over the previous year. Co-operatives accounted for 33 p.c. of the total value of farm products marketed in Canada in 1958-59, the same proportion as in the preceding year. Sales of farm products by the marketing and purchasing group were recorded at $963,330,000, an increase of more than $65,000,000 over 1958. Grain and seed, valued at $366,589,000, made up 38 p.c. of the total farm products marketed, and sales of livestock at $287,204,000 and of dairy products at $216,447,000 accounted for the bulk of the remainder although sales of fruit and vegetables and of eggs and poultry were also substantial, with reported amounts of $41,682,000 and $38,828,000, respectively.

On a provincial level, Saskatchewan recorded the greatest value of produce co-operatively marketed, amounting to $259,647,000; grain and seed sales made up 60 p.c. of this amount. Other provinces sharing substantially in the co-operative sales of farm products were: Ontario with $185,499,000, Alberta $174,026,000, Quebec $108,077,000, Manitoba $81,403,000 and British Columbia $65,189,000.

Co-operative sales of merchandise and supplies to members amounted to $332,943,000 in 1959, an increase of $36,000,000 over the previous year; feed, fertilizer and spray material represented 32 p.c. of the total. Leading provinces for co-operative sales of merchandise and supplies were: Quebec with $80,124,000, Saskatchewan with $69,844,000 and Ontario with $64,950,000. Members' equity in their marketing and purchasing co-operatives increased by $24,000,000 in 1959 and an increase of $31,000,000 was recorded in liabilities to the public.

The local co-operatives are served by ten wholesale associations which are owned and controlled by their respective member co-operatives. The wholesale associations had assets amounting to $77,000,000 in 1959, of which members' equity represented 42 p.c. Total sales of supplies and farm products by these wholesales amounted to $283,000,000 in 1959, an increase of 13 p.c. over the previous year.

In addition to the above-mentioned associations, there are 846 service co-operatives providing a wide range of functions such as housing, rural electrification, medical insurance, transportation, recreation facilities, custom grinding, seed cleaning, operation of farm machinery, restaurant operation or other services. These associations had a total membership of 263,084 and assets amounting to $95,642,000 in 1959.

The data for marketing and purchasing co-operatives do not include fishermen's co-operatives. Such co-operatives reported a membership of 10,968 in 1959 and are organized in all provinces with the exception of Manitoba and Alberta. In 1959 they reported sales of fish amounting to $21,014,000 and sales of fish supplies amounting to $4,147,000, which constituted about 10 p.c. of all fish and fish supplies marketed in Canada. The proportions reported for the different areas across the country were: the Atlantic Provinces 37 p.c. (including the business of United Maritime Fishermen, an interprovincial co-operative), British Columbia 31 p.c., Ontario 15 p.c., Quebec 15 p.c. and Saskatchewan 2 p.c.

39.—Summary Statistics of Co-operative Marketing and Purchasing Associations, Crop Years Ended July 31, 1950-59

Year	Associations	Places of Business	Shareholders or Members	Sales of Farm Products	Sales of Supplies	Total Business[1]
	No.	No.	No.	$	$	$
1950	2,495	5,761	1,173,126	803,638,962	206,082,408	1,015,264,763
1951	2,348	5,830	1,184,235	769,264,824	209,985,515	988,459,832
1952	2,194	5,470	1,163,803	840,113,835	234,848,220	1,085,854,744
1953	2,221	4,987	1,195,985	874,698,323	245,629,603	1,147,590,401
1954	2,086	4,510	1,196,426	733,012,042	234,583,125	986,297,820
1955	1,949	5,016	1,199,808	704,047,067	228,446,485	941,377,889
1956	2,041	5,171	1,255,788	823,389,051	258,751,870	1,092,516,230
1957	2,022	5,023	1,363,470	817,601,000	283,730,000	1,116,002,000
1958	2,002	5,135	1,321,304	898,168,000	296,743,000	1,209,805,000
1959	1,982	5,267	1,290,462	963,330,000	332,943,000	1,315,167,000

[1] Includes other revenue.

40.—Summary Statistics of Co-operative Marketing and Purchasing Associations, by Province, Crop Years Ended July 31, 1958 and 1959

Province and Year		Associations	Shareholders or Members	Sales of Products	Sales of Merchandise	Total Business[1]
		No.	No.	$	$	$
Newfoundland	1958	48	7,298	9,000	4,816,000	4,853,000
	1959	45	7,324	25,000	4,421,000	4,463,000
Prince Edward Island	1958	19	5,277	1,550,000	3,582,000	5,199,000
	1959	20	6,012	2,278,000	4,166,000	6,537,000
Nova Scotia	1958	94	24,123	6,934,000	14,656,000	22,008,000
	1959	100	24,219	6,371,000	15,592,000	22,274,000
New Brunswick	1958	55	13,197	8,708,000	7,376,000	16,256,000
	1959	57	13,987	9,033,000	7,919,000	17,143,000

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[1] Includes other revenue.

40.—Summary Statistics of Co-operative Marketing and Purchasing Associations, by Province, Crop Years Ended July 31, 1958 and 1959—concluded

Province and Year		Associations	Shareholders or Members	Sales of Products	Sales of Merchandise	Total Business[1]
		No.	No.	$	$	$
Quebec	1958	615	92,504	93,324,000	67,534,000	162,691,000
	1959	614	92,162	108,077,000	80,124,000	188,362,000
Ontario	1958	293	149,841	160,654,000	58,866,000	221,869,000
	1959	293	156,478	185,499,000	64,950,000	254,228,000
Manitoba	1958	115	138,117	77,605,000	18,796,000	97,860,000
	1959	107	135,808	81,403,000	22,690,000	106,113,000
Saskatchewan	1958	461	514,911	263,698,000	64,676,000	332,822,000
	1959	455	471,850	259,647,000	69,844,000	337,283,000
Alberta	1958	175	205,990	151,630,000	26,323,000	179,591,000
	1959	175	218,615	174,026,000	28,982,000	204,866,000
British Columbia	1958	121	56,333	66,726,000	22.223,000	91,066,000
	1959	110	50,613	65,189,000	24,721,000	92,169,000
Interprovincial	1958	6	113,713	67,330,000	7,895,000	75,590,000
	1959	6	113,394	71,782,000	9,534,000	81,729,000
Totals	**1958**	**2,002**	**1,321,304**	**898,168,000**	**296,743,000**	**1,209,805,000**
	1959	**1,982**	**1,290,462**	**963,330,000**	**332,943,000**	**1,315,167,000**

[1] Includes other revenue.

41.—Products Handled by Marketing and Purchasing Co-operatives, Crop Years Ended July 31, 1958 and 1959

Product	1958		1959	
	Associations[1]	Value of Sales	Associations[1]	Value of Sales
	No.	$	No.	$
Marketing	**1,119**	**898,168,000**	**1,017**	**963,330,000**
Dairy products	441	185.989,000	438	216,447,000
Fruit and vegetables	142	42,917,000	161	41,682,000
Grain and seed	126	368,833,000	135	366,589,000
Livestock	341	251,622,000	332	287,204,000
Eggs and poultry	163	33,099,000	176	38,828,000
Lumber and wood	62	3,238,000	44	2,875,000
Honey	5	2,475,000	9	2,550,000
Wool	11	1,767,000	11	1,270,000
Fur	6	581,000	4	608,000
Tobacco	3	4,519,000	8	1,946,000
Maple products	1	2,543,000	3	2,747,000
Miscellaneous	65	585,000	69	584,000
Merchandising	**1,597**	**296,743,000**	**1,568**	**332,943,000**
Food products	814	82,649,000	818	94,463,000
Clothing and home furnishings	560	9,659,000	533	11,596,000
Hardware	757	18,324,000	719	21,464,000
Petroleum products and auto accessories	660	52,287,000	654	57,855,000
Feed, fertilizer and spray material	1,084	100,257,000	1,040	108,857,000
Machinery and equipment	259	8,732,000	234	10,763,000
Coal, wood and building material	600	17,319,000	573	20,032,000
Miscellaneous	582	7,516,000	594	7,913,000
Totals	**2,716**	**1,194,911,000**	**2,585**	**1,296,273,000**

[1] Duplication exists in this column as some associations market produce as well as handle supplies, some associations market more than one product and some handle many of the supplies listed.

Section 5.—Interprovincial Freight Movements*

Statistics relating to interprovincial freight movements are difficult to collect since there are no controls over or barriers to such trade. Provincial freight traffic statistics are available for loadings and unloadings of goods carried by rail, water, pipeline and motor transport.

Details of railway freight movement are confined to tons loaded and unloaded by province and contain a certain amount of import and export of goods shipped by water. The figures shown in Table **42**, however, do not give a precise measure of total interprovincial freight movement by rail; they indicate only the net interprovincial movement of railway freight, which is but one aspect of that trade. For water-borne traffic, Table **43** shows tonnages of all cargoes unloaded at Canadian ports in both interprovincial and intra-provincial trade, by province of origin. Interprovincial data for oil carried by pipeline are given in Tables **44** to **46**; Table **44** shows the quantity of oil entering Canadian pipelines by province and by type of line, and Table **45** shows the quantity of oil delivered by Canadian pipelines by province and by type of line. Oil movement by pipeline between Canada and the United States is also included in Tables **44** and **45**; imports for each province are shown in Table **44** and exports for each province in Table **45**. Canadian crude oil re-imported by the Interprovincial Pipe Line Company through its pipeline in southern Ontario is shown separately in Table **46**.

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* Revised in the Transportation Section, Public Finance and Transportation Division, Dominion Bureau of Statistics.

42.—Railway Revenue Freight Movement, by Province,[1] 1958 and 1959

Province	Loaded		Received from U.S.A. Rail Connections		Totals Carried[2]	
	1958	1959	1958	1959	1958	1959
	tons	tons	tons	tons	tons	tons
Newfoundland	1,459,854	1,473,152	—	—	1,459,854	1,473,152
Prince Edward Island	360,949	342,368	—	—	360,949	342,368
Nova Scotia	8,656,152	11,282,035	—	—	8,656,152	11,282,035
New Brunswick	3,571,657	3,923,839	449,509	463,082	4,021,166	4,386,921
Quebec	31,187,355	37,445,678	3,238,510	3,263,829	34,425,865	40,709,507
Ontario	39,844,252	42,883,109	18,347,351	19,323,467	58,191,603	62,206,576
Manitoba	7,125,015	7,069.952	453,740	464,407	7,578,755	7,534,359
Saskatchewan	14,366.515	12,715,636	212,919	205,300	14,579,434	12,920,936
Alberta	11,355,842	11,786,847	153,763	119,221	11,509,605	11,906,068
British Columbia	10,167,784	10,844,137	1,100,214	1,203,528	11,267,998	12,047,665
Totals	**128,095,375**	**139,766,753**	**23,956,006**	**25,042,834**	**152,051,381**	**164,809,587**
	Unloaded		Delivered to U.S.A. Rail Connections		Totals Terminated[2]	
	1958	1959	1958	1959	1958	1959
	tons	tons	tons	tons	tons	tons
Newfoundland	2,084,681	1,996,997	—	—	2,084,681	1,996,997
Prince Edward Island	494,068	574,806	—	—	494,068	574,806
Nova Scotia	8,284,698	10,533,155	—	—	8,284,698	10,533,155
New Brunswick	4,071,468	4,410,217	562,619	437,481	4,634,087	4,847,698
Quebec	31,801,998	37,463,126	5,061,907	5,242,067	36,863,905	42,705,193
Ontario	48,504,141	51,057,479	19,124,697	20,213,874	67,628,838	71,271,353
Manitoba	7,160,237	7,141,358	650,072	744,674	7,810,309	7,886,032
Saskatchewan	4,195,970	3,882,761	1,256,844	1,218,063	5,452,814	5,100,824
Alberta	6,442,091	6,391,662	37,179	29,190	6,479,270	6,420,852
British Columbia	11,484,162	11,880,749	1,689,209	1,979,043	13,173,371	13,859,792
Totals	**124,523,514**	**135,332,310**	**28,382,527**	**29,864,392**	**152,906,041**	**165,196,702**

[1] Class I and II railways operating in Canada.

[2] Figures for freight carried and freight terminated do not agree because freight loaded within a certain year is not all unloaded within the same year.

43.—Tonnage of Cargo Loaded and Unloaded at Canadian Ports in Interprovincial Trade, by Province, 1958 and 1959

Year and Province of Unloading	Province of Loading								Canada
	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	B.C. and N.W.T.	
	tons	tons	tons	tons	tons	tons	tons	tons	tons
1958									
Nfld.	640,504	26,795	857,431	29,530	111,523	23,363	11	—	1,689,157
P.E.I.	67	—	115,838	—	1,368	1,754	—	—	119,027
N.S.	671,371	8,721	261,473	59,489	367,509	600	—	82	1,369,245
N.B.	965	13,676	368,148	74,791	285,997	1,624	—	57,606	802,807
Que.	156,107	16,660	2,302,501	61,354	6,417,992	4,778,883	2,375	11,946	13,747,818
Ont.	5,384	—	—	—	1,923,145	12,234,355	—	156	14,163,040
Man.	—	—	—	—	535	16	—	21,157	21,708
B.C. and N.W.T.	10,373	—	4,857	—	57,129	—	355	6,793,388	6,866,102
Totals, 1958	**1,484,771**	**65,852**	**3,910,248**	**225,164**	**9,165,198**	**17,040,595**	**2,741**	**6,884,335**	**38,778,904**
1959									
Nfld.	763,017	26,576	971,983	7,201	166,019	27,556	—	69	1,962,421
P.E.I.	3,435	—	120,520	—	5,796	1,275	—	—	131,026
N.S.	794,827	13,369	279,365	53,245	535,460	53,557	—	5,317	1,735,140
N.B.	1,576	35,319	470,135	95,073	330,527	4,447	—	2,055	939,134
Que.	165,494	52,167	2,290,466	75,433	6,060,194	3,943,092	2,656	15,509	12,605,011
Ont.	7,957	—	2,100	—	3,130,575	11,156,044	—	132	14,296,808
Man.	—	—	—	—	211	—	22,684	—	22,895
B.C. and N.W.T.	342	—	4,314	—	55,942	—	2,477	7,943,140	8,006,215
Totals, 1959	**1,736,648**	**127,431**	**4,138,885**	**230,952**	**10,284,724**	**15,185,971**	**27,817**	**7,966,222**	**39,698,650**

44.—Oil Carried by Pipeline, by Province of Origin of Shipment or Border-Crossing Point, 1958-60

Province of Origin or Entry	1958	1959	1960
	bbl.	bbl.	bbl.
Yukon Territory—[1]			
Trunk	—	37,675	322,451
British Columbia—			
Gathering	—	—	14,896
Alberta—[2]			
Gathering	106,105,374	124,370,832	127,791,545
Trunk	4,715,928	5,172,302	5,805,649
Saskatchewan—			
Gathering	38,515,410	41,976,907	47,989,210
Trunk	3,037,281	3,508,437	2,643,637
Manitoba—			
Gathering	5,776,991	5,014,012	4,794,044
Ontario—[3]			
Imports via Sun Pipe Line Co.	2,404,698	2,065,666	2,461,161
Trunk—refinery products	27,292,512	30,082,122	29,779,397
Quebec—			
Imports via Montreal Pipe Line Co.	78,577,075	84,394,929	79,143,068
Trunk—refinery products[4]	15,947,552	15,592,978	17,810,558
Net Received—			
Gathering	**150,397,775**	**171,361,751**	**180,589,695**
Trunk	**50,993,273**	**54,393,514** [r]	**56,361,692**
Imports from U.S.A.	**80,981,773**	**86,460,595**	**81,604,229**
Totals	**282,372,821**	**312,215,860** [r]	**318,555,616**

[1] Products of refineries.
[2] Includes natural gasoline and other products.
[3] Oil re-imported via Interprovincial Pipe Line Company is shown in Table 46.
[4] Refinery products destined for Ontario.

45.—Oil Delivered by Pipeline, by Province in which Shipment Terminated or was Transferred to Other Carriers, 1958-60

Province of Termination or Delivery to Other Carriers	1958	1959	1960
	bbl.	bbl.	bbl.
Yukon Territory—[1]			
Trunk	—	37,157	320,360
British Columbia—			
Trunk terminated	20,597,276	22,585,326	23,284,402
Exports via Trans Mountain Oil Pipe Line Co.[2]	8,968,639	13,271,836	18,125,927
Alberta—[3]			
Gathering	1,443,603	7,418,683	8,682,575
Trunk	14,707,003	15,322,326	14,386,206
Saskatchewan—			
Gathering	513,741	902,517	646,371
Trunk	15,775,334	17,606,602	17,589,052
Manitoba—			
Trunk terminated	10,628,835	10,977,184	11,275,498
Exports to U.S.A. via Interprovincial Pipe Line Co.	20,781,689	20,433,937	23,245,945
Exports to Ontario via Interprovincial Pipe Line Co.[4]	59,552,656	69,870,438 r	70,912,129
Ontario—			
Trunk, crude	2,183,377 r	1,688,173 r	1,866,029
Trunk, refinery products	43,478,139 r	45,858,662 r	47,680,313
Quebec—			
Trunk	78,547,073	84,371,790	79,170,088
Net Delivered—			
Gathering	**1,957,344**	**8,321,200**	**9,328,946**
Trunk Terminated[5]	**245,469,693**	**268,317,668** r	**266,484,077**
Exports[2]	**29,750,328**	**33,705,773**	**41,371,872**
Totals	**277,177,365**	**310,344,641** r	**317,184,895**

[1] Products of refineries. [2] Includes oil delivered at dock for export. [3] Includes natural gasoline and other products. [4] Oil leaving Manitoba for Ontario via U.S.A. Some of this is returned to Canada via ship from Superior, Wis. The amount returned by pipeline is shown in Table 46. [5] Includes oil destined for Ontario leaving Manitoba.

46.—Re-import and Delivery of Oil by Interprovincial Pipe Line Company in Ontario, 1958-60

Item	1958	1959	1960
	bbl.	bbl.	bbl.
Re-import	56,880,146	69,806,042	69,759,639
Delivery	56,912,521	69,943,696	46,142,469

PART II.—GOVERNMENT AIDS TO AND CONTROL OF DOMESTIC TRADE

Section 1.—Controls Affecting the Marketing of Farm Products

Subsection 1.—Control of the Grain Trade

The agencies exercising control of the grain trade in Canada include the Board of Grain Commissioners which, since 1912, has administered the provisions of the Canada Grain Act, and the Canadian Wheat Board which operates under the Canadian Wheat Board Act, 1935.

The Board of Grain Commissioners.*—The Board of Grain Commissioners was established in 1912 under the authority of the Canada Grain Act, 1912 (RSC 1952, cc. 25 and 308 and amendments). It is a quasi-judicial and administrative body of three—a Chief Commissioner and two Commissioners—reporting to the Minister of Agriculture.

The Canada Grain Act has been called the Magna Charta of the Canadian grain trade or, more particularly, of the Canadian farmer, and the Board's chief duties are to ensure that the rights conferred on the different parties by the provisions of the Act are properly protected. Transportation of grain is restricted except from or to licensed elevators, and restriction is placed on the use of established grade names. The Act does not provide for any control or supervision of grain exchanges and the Board of Grain Commissioners has no power or duties in the matter of grain prices.

The Board manages and operates, under semi-public terminal licences, the Canadian Government elevators situated at Moose Jaw and Saskatoon, Sask., Lethbridge, Edmonton and Calgary, Alta., and Prince Rupert, B.C., and leases the Canadian Government elevator at Port Arthur, Ont., to a privately owned grain company. The Executive Offices of the Board and other principal offices are situated in Winnipeg, Man., but branch offices are maintained at numerous points from Montreal in the east to Victoria in the west. Total personnel is approximately 900.

On a fee basis, the Board provides official inspection, grading and weighing of grain, and registration of warehouse receipts. All operators of elevators in Western Canada and of elevators in Eastern Canada that handle western-grown grain for export, as well as all parties operating as grain commission merchants, track buyers of grain, or as grain dealers, are required to be licensed by the Board annually and to file security by bond or otherwise as a guarantee for the performance of all obligations imposed upon them by the Canada Grain Act or by the regulations of the Board.

To protect the rights of the different parties, the Board has jurisdiction to inquire into and is empowered to give direction regarding any matter relating to the grading or weighing of grain; deductions made from grain for dockage; shortages on delivery of grain into or out of elevators; unfair or discriminatory operation of any elevator; refusal or neglect of any person to comply with any provision of the Canada Grain Act; and any other matter arising out of the performance of the duties of the Board.

In the Prairie Provinces the Board maintains four Assistant Commissioners—one in Alberta, two in Saskatchewan and one in Manitoba. These Commissioners investigate complaints of producers and inspect periodically the country elevators in their respective provinces; all elevators with their equipment and stocks of grain are subject at any time to inspection by officials of the Board.

The Board sets up, annually, Committees on Grain Standards and also appoints Grain Appeal Tribunals to give final decisions in cases where appeals are made against the grading of grain by the Board's inspection officials. To assist in maintaining the uniform quality of the top grades of Red Spring Wheat handled through terminal elevators, the Canada Grain Act provides that wheat of these grades shall be stored with grain of like grade only.

In addition to its duties under the Canada Grain Act, certain other duties are performed by the Board. Under the provisions of the Inland Water Freight Rates Act (RSC 1952, c. 153), the Board maintains records of rates for the carriage of grain from Fort William or Port Arthur, Ont., by lake or river navigation and is empowered to prescribe maximum rates for such carriage. Under the provisions of the Prairie Farm Assistance Act (RSC 1952, c. 213 as amended), the Board collects from licensees under the Canada Grain Act, 1 p.c. of the purchase price of wheat, oats, barley, rye, flax and rapeseed purchased by such licensees.

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* Prepared by W. J. MacLeod, Secretary of the Board of Grain Commissioners for Canada, Winnipeg, Man.

The Canadian Wheat Board.*—The Canadian Wheat Board was established under the Canadian Wheat Board Act of 1935 for the purpose of "the marketing in an orderly manner, in interprovincial and export trade, of grain grown in Canada". The Board was at first a voluntary Board, that is, farmers had the option of marketing their wheat through it or through the private grain trade. In 1943, under the War Measures Act, the Board was made a compulsory Board, and all wheat going into commercial channels was required to be marketed through it. At the end of the War, the Transitional Powers Act continued the Board as the sole marketing agency for wheat until 1947 when the Canadian Wheat Board Act was amended. The major wartime powers of the Board were continued in the 1947 Act. It is under provisions of this 1947 legislation (RSC 1952, c. 44 and amendments) that the Board is operating today.

The Canadian Wheat Board accomplishes its objective of orderly marketing of grain through regulation and agreement. It owns no grain handling facilities but, by entering into agreements with the owners of these facilities, it attempts to bring about an orderly flow of grain through each of the steps involved in merchandising the grain from the producer to the domestic or overseas buyer.

In the selling of wheat, the Board utilizes the services of shippers and exporters. In its sales operations, the Board endeavours to meet the wishes of overseas buyers and, on occasion, enters into direct contracts. When an exporter completes an export sale, in his capacity as an agent of the Board, he is responsible for the transaction; he completes the transaction with the buyer and settles with the Board for the purchase of the wheat from the Board.

When the commercial storage facilities are inadequate to handle all the grain produced, it is necessary for the Board to regulate the flow of grain from the producer to these forward positions. The first step is accomplished by the use of producer's delivery permits issued annually by the Canadian Wheat Board. Every delivery of grain made to country elevators by a producer is entered in his permit book. By regulating the amount of grain delivered by the producer to the country elevator by the use of a quota system, and by apportioning shipping orders to country elevators according to the needs created by sales commitments, the Wheat Board regulates the amount of grain coming into the marketing channel.

The next step is the handling of the grain by the country elevator. The maximum charges for the handling and storing of the grain are set by the Board of Grain Commissioners, but the actual charges are subject to negotiation between the elevator companies and the Wheat Board.

The third step in the marketing process—transporting the grain from the country elevators to the large terminal elevators in Eastern Canada, Churchill or the West Coast—is carried out by the railways. The Wheat Board determines the kinds and grades of grain that are required at the different terminal destinations to meet its sales commitments and informs the elevator companies and the railways of these needs. The maximum tariffs are set by an agreement between the railways and the Federal Government.

The fourth major step—storing and handling of the grain at terminal elevators—is done in privately or co-operatively owned elevators. Maximum charges are established for this service by the Board of Grain Commissioners.

In the case of oats and barley, the Board's operations are less extensive than those relating to wheat. These two grains are sold in store positions at the terminal elevators at Fort William–Port Arthur and Vancouver. Oats and barley are marketed either on a straight cash basis at prices quoted daily by the Board or on the basis of exchange of futures concluded through the facilities of the Winnipeg Grain Exchange. The Board controls the movement of coarse grains to the Lakehead. The private trade is responsible for the movement of oats and barley from Fort William–Port Arthur or Vancouver positions.

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* Prepared by C. B. Davidson, Executive Assistant, The Canadian Wheat Board, Winnipeg, Man.

The producer receives payment for his wheat, oats and barley in two or three stages. An initial payment price is established early in the crop year by Order in Council. The initial payment price less the cost of handling grain at the local elevator and the transportation costs to the Lakehead or Vancouver is the initial price received by the producer. This price is a guaranteed floor price in that if the Wheat Board, in selling the grain, does not realize this price and the necessary marketing costs, the deficit is borne by the Federal Treasury. However, with very few exceptions, the Wheat Board has operated without financial aid from the Federal Treasury.

After the end of the crop year, but prior to the final payment being made, if the Wheat Board can confidently foresee a surplus accumulating and if authorized by Order in Council, an interim payment is made to producers. This interim payment is the same amount per bushel to all producers of the same grade of grain. When the Board has sold all the grain or otherwise disposed of it in accordance with the Canadian Wheat Board Act, the Board, if authorized by Order in Council, makes a final payment to producers.

Under the Prairie Grain Advance Payments Act, administered by the Board, producers may receive, through their elevator agents, cash advances on farm-stored grain in accordance with a prescribed formula. The purpose of this legislation is to make cash available to producers pending delivery of their grain under delivery quotas established by the Board. Cash advances are interest-free as far as producers are concerned.

Western Canadian producers receive the price for their grain that the Wheat Board receives, less its operating costs including carrying charge, and the general level of prices received by the Board is determined by competitive conditions in world markets. The only subsidy received by the farmer in the Canadian wheat marketing system is the part payment of storage costs for wheat made by the Government of Canada. Under provisions of the Temporary Wheat Reserves Act, the Minister of Finance, out of the Consolidated Revenue Fund, pays to the Wheat Board the storage costs on wheat in storage at the end of the crop year in excess of 178,000,000 bu.

Subsection 2.—Controls Over Farm Products Other Than Grain*

With the growing complexity of agricultural marketing caused by the fact that the producer is more and more becoming a specialist and produces more for marketing off the farm than for his own needs, a substantial and continuing change in the approach to marketing problems is evident.

With the exception of tobacco, little or no attempt at production control has been introduced in Canada, although in some countries this also forms part of a broad program of market control. The methods of control might be summarized as follows, although some of those mentioned may be combined in certain operations: (1) producers may organize co-operative marketing agencies; (2) producers may establish compulsory marketing boards to bargain with groups buying the product for processing or further sale; (3) producers may establish compulsory marketing boards to direct the flow of product and bargain on price; (4) producers may request the Federal Government to establish a government marketing board; and/or (5) producers may request intervention in the pricing system through an offer by the Government to either assist in financing the orderly marketing of the product or in the support of the price of the product in the market-place.

The Government of Canada and provincial governments have, through legislation and in other ways, given marketing aids such as those related to research, education, information, inspection, grading and many other service measures of this type, designed to assist in making adjustments in marketing within agriculture and between agriculture and the remainder of the economy.

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* Prepared in the Economics Division of the Administration Branch, Department of Agriculture, Ottawa. A more detailed statement on this subject, including the history of developments leading to the present situation, appeared in the 1960 Canada Year Book, pp. 961-966.

There exists in Canada today considerable legislation on the federal, provincial and municipal levels which gives government agencies and farmers the power to take measures for controlling the marketing of farm products. Legislation relating to grain marketing is dealt with in the previous Subsection and an attempt is made here to cover in a general way some of the other types of legislation, with particular reference to the Agricultural Products Co-operative Marketing Act, the Agricultural Products Marketing Act and the Agricultural Stabilization Act.

General Marketing Controls.—At the municipal level, many cities and towns have controls with respect to the sale of foods in certain areas or with respect to health standards. For example, most municipalities have some form of health regulation concerning milk being sold within their boundaries. This is often extended to licensing for the purpose of assuring sanitary standards on the farms where the milk originates. Similarly, zoning by-laws not only may control the areas where commercial merchandising generally can take place but may state that public markets where fruits and vegetables and other goods are sold may operate only under fairly strict supervision of the municipality.

With respect to provincial government controls, most of the provinces enacted milk control legislation before 1940. Most of them finance these milk-control agencies out of public funds, others finance through the collection of licence fees and assessments from those engaged in the fluid milk industry, and some combine the two methods. Most milk-control agencies have authority to carry out some system of licensing which provides for the revocation of such licences if those engaged in the fluid milk business do not conform with the orders of the milk control board.

Price control exercised by these boards takes various forms ranging from the establishment of a minimum price per hundredweight to be paid to producers to complete control of minimum or maximum prices for milk to consumers. In recent years there has been a tendency in some provinces to leave more freedom in pricing to normal competition except for the establishment of a minimum price to producers; in a number of provinces this minimum price is fixed by formula.

The powers given to or requirements made by milk control boards include: (1) authority to inquire into all matters pertaining to the fluid milk industry, to define market areas, to arbitrate disputes, to examine the books and records of those engaged in the industry, to issue and revoke licences, and to establish a price for milk; and (2) authority to require a bond from distributors, periodic reports from distributors, payments to be made to producers by a certain date each month, distributors to give statements to suppliers, distributors to give notice before ceasing to accept milk from any producer, producers to give notice before ceasing to deliver milk to any distributor, and the prohibition of distributors requiring capital investment from producers.

Thus fluid milk controls are not only widespread but numerous and are generally considered to be administered in the public interest as well as in the interest of those who have regular opportunities to appear before the boards in connection with requests for price changes.

Federally, the Food and Drug Directorate of the Department of National Health and Welfare has wide control over the content of foods sold, the Department of Agriculture exercises some control over size and type of packages and containers used in food preparation, and the Weights and Measures Division of the Department of Trade and Commerce also exercises controls in its sphere.

The Agricultural Products Co-operative Marketing Act.—In the late 1930's, the Federal Government decided to assist orderly marketing by encouraging the establishment of pools which would return to the producer the maximum sales return for his product less a maximum margin for handling expenses agreed upon in advance. Thus the Agricultural Products Co-operative Marketing Act and the Wheat Co-operative Marketing Act were passed in 1939. The latter was used in one year only but the Agricultural Products Co-operative Marketing Act, which covers the marketing of all agricultural products except wheat, has been used to a greater or lesser degree from time to time during the intervening years.

The purpose of this Act is to aid farmers in pooling the returns from sale of their products by guaranteeing initial payments and thus assisting in the orderly marketing of the product. The Government will undertake to guarantee a certain minimum initial payment to the producer at the time of delivery of the product including a margin for handling, sales returns to be made to the producer on a co-operative plan. The guaranteed initial payment may be up to a maximum of 80 p.c. of the average price for the previous three years, the exact percentage to be recommended by the Minister of Agriculture who enters into an agreement with the selling agency for the product. The payment to the producer is to be made through the sales agency on a graded basis at the time of delivery of the product.

Agreements under this Act have been made with respect to the marketing of maple products, honey, onions, potatoes, cheddar cheese, apples, peaches, apricots, cherries, oats, barley, flax, rye, corn, fox and mink pelts, and the following seeds: alfalfa, crested wheat grass, brome grass, slender wheat grass, western rye grass, timothy, red clover, alsike clover, sweet clover, creeping red fescue, meadow fescue, and peas. Thus far the Government of Canada has suffered losses under this Act only with respect to fox pelts and potatoes. This experience indicates that any service to agriculture rendered by this Act has been at relatively small expense to the taxpayers of Canada except for minor administrative expenses, most of which have been taken care of as part of the day-to-day administration of the Department of Agriculture.

The Agricultural Products Marketing Act.—Following the withdrawal of wartime powers of the Federal Government, the Agricultural Products Marketing Act of 1949 was enacted to provide delegation for like powers to those established for marketing boards within a province for the purposes of interprovincial and export trade. A Supreme Court judgment in January 1952 cleared the validity of the Agricultural Products Marketing Act but left some doubt with respect to how licences, levies or other charges could be made by marketing boards beyond the extent of immediate administrative expenses without some approval by the Federal Government in its constitutional field of indirect taxation. In April 1957, following a further Supreme Court judgment in respect to Ontario legislation, an amendment to the federal Agricultural Products Marketing Act vested in the Governor in Council the right to authorize local boards to "fix, impose and collect levies or charges from persons engaged in the production or marketing of the whole or any part of any agricultural product and for such purpose to classify such persons into groups and fix the levies or charges payable by the members of the different groups in different amounts, to use such levies or charges for the purposes of such board or agency, including the creation of reserves, and the payment of expenses and losses resulting from the sale or disposal of any such agricultural product, and the equalization or adjustment among producers of any agricultural product of moneys realized from the sale thereof during such period or periods of time as the board or agency may determine".

There are at present close to 75 such marketing boards organized in Canada, about one-half of which are in the Province of Quebec and about one-quarter in Ontario; all other provinces with the exception of Newfoundland have one or more boards.

The annual statistical report prepared by the Economics Division of the Department of Agriculture in relation to these boards indicates that about one-seventh of the farm cash income in Canada in 1959 was received from sales made under the control of provincial marketing board plans, including the following commodities: seed corn, potatoes, other vegetables, sugar beets, tobacco, hogs, certain dairy products, fruits, wool, honey, white beans, maple products, pulpwood, wheat and soybeans. As at Apr. 1, 1961, 31 of these provincial boards had received an extension of powers for purposes of interprovincial and export trade from the Federal Government. Three had received authority to collect levies in excess of administrative expenses.

The Agricultural Products Marketing Act does not give the local or provincial marketing board any greater control over agencies outside the province than is possible through the control of the commodity by the board and whatever contractual arrangements it may make with such agencies outside the province. It does make it possible, however, for marketing boards to give groups within a province complete marketing control over any commodity produced in that province, or any area of that province which may be defined.

The Agricultural Stabilization Act.—The functions of this Act, passed in 1958, and its administration are outlined in the Agriculture Chapter in connection with the special article on "The National Agricultural Program", pp. 399-400.

Under the Act, all price support levels must be related to a price formula based on the most recent ten-year average of market prices for the product concerned. In addition, the Agricultural Stabilization Board, unless the Government sets a higher support level, must support the prices of nine key commodities at not less than 80 p.c. of the ten-year average market price. The named commodities are: butter, cheese, eggs, cattle, hogs, sheep, wheat, oats and barley (for the latter three, the support applies to grains produced outside the prairie areas designated under the Canadian Wheat Board Act). Other commodities can be supported at such percentage of the ten-year average market price as may be approved by the Government from time to time. Prices established for the nine named commodities must be announced so that they can apply for 12 months from the effective date. Support of designated commodities is also normally for a 12-month period.

In the first year of operation of the Agricultural Stabilization Board, 21 commodities were under support. In the year ended Mar. 31, 1960, 18 commodities were under support, and the following year, 16 commodities. Most of the commodities were at the 80-p.c.-or-higher level of the ten-year average. The net cost of support in the fiscal year 1959-60 was approximately $60,000,000, with a higher cost in 1960-61.

The Agricultural Stabilization Board may support the price of products in any one or more of three ways: (1) an offer to purchase by the Board; (2) underwriting the market through producer guarantees, commonly called the "deficiency payment" method; or (3) making such payment for the benefit of producers as may be authorized for the purpose of stabilizing the price of an agricultural commodity. The third method is new under the Agricultural Stabilization Act. All methods have been used during the first years of operation of the Act, although recently there has been some tendency to use the so-called deficiency payment method to a greater degree.

Section 2.—Combinations in Restraint of Trade*

The purpose of Canadian anti-combines legislation is to assist in maintaining free and open competition as a prime stimulus to the achievement of maximum production, distribution and employment in a system of free enterprise. To this end, the legislation seeks to eliminate certain practices in restraint of trade, which serve to prevent the nation's economic resources from being most effectively used for the advantage of all citizens.

By amendments which came into force on Aug. 10, 1960 (SC 1960, c. 45), all the provisions of the anti-combines legislation which previously had been divided between the Combines Investigation Act (RSC 1952, c. 314) and the Criminal Code were amended and consolidated in the Act. The substantive provisions now are contained in Sects. 2,

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* Revised by D. W. H. Henry, Q.C., Director of Investigation and Research, Combines Investigation Act, Department of Justice, Ottawa.

32, 33, 33A, 33B, 33C and 34 of the Combines Investigation Act. The Act was enacted in 1923 and was amended extensively in 1935, 1937, 1946, 1949, 1951 and 1952 as well as in 1960.

Sect. 32, generally speaking, forbids in Subsect. (1) combinations that prevent or lessen "unduly" competition in the production, manufacture, purchase, barter, sale, storage, rental, transportation or supply of an article of trade or commerce or in the price of insurance. Subsect. (1) derives from Sect. 411 of the Criminal Code which was enacted originally in 1889. While Subsect. (2) provides that no person shall be convicted for participation in an arrangement relating only to such matters as the exchange of statistics or the defining of product standards, etc., Subsect. (3) provides that Subsect. (2) does not apply if the arrangement has lessened or is likely to lessen competition unduly in respect of prices, quantity or quality of production, markets or customers or channels of distribution, or if the arrangement "has restricted or is likely to restrict any person from entering into or expanding a business in a trade or industry". Subsect. (4) provides that, subject to Subsect. (5), no person shall be convicted for participation in an arrangement which relates only to the export trade. Subsect. (5) provides that Subsect. (4) does not apply if the arrangement has had or is likely to have harmful effects on the volume of export trade or on the businesses of Canadian competitors or on domestic consumers.

Sects. 2 and 33 make it an offence to participate in a merger which has or is likely to have the effect of lessening competition to the detriment or against the interest of the public. These Sections also make it an offence to participate in a monopoly which has been operated or is likely to be operated to the detriment or against the interest of the public.

Sect. 33A deals with what are commonly called "price discrimination" and "predatory price cutting". It provides that a supplier may not make a practice of discriminating among those of his trade customers who come into competition with one another by giving one a preferred price which is not available to another if the second is willing to buy in like quantities and qualities as the first; and it also forbids a supplier from selling at prices lower in one locality than in another, or unreasonably low anywhere, if the effect or tendency of such policy is to lessen competition substantially or eliminate competitors or the policy is designed to have such effect.

Sect. 33B provides that where a supplier grants advertising or display allowances to competing trade customers he must grant them in proportion to the purchases of such customers; any services he exacts in return must be such that his different types of customers are able to perform; and if such customers are required to incur expenses to earn such allowances, such expenses also must be proportionate to their purchases.

Sect. 33C makes it an offence for any person, for the purpose of promoting the sale or use of an article, to make any materially misleading representation to the public concerning the price at which such or like articles have been, will be or are ordinarily sold.

Sect. 34 prohibits a supplier of goods from prescribing the prices at which they are to be resold by wholesalers or retailers or from cutting off supplies to a merchant because of the merchant's failure or refusal to abide by such prices, i.e., the practice of "resale price maintenance". The Section also provides that it shall not be inferred that a person practised resale price maintenance simply because he refused, or counselled the refusal of supplies to a merchant if there was reasonable cause to believe and the supplier did believe that the merchant was making a practice of using articles of such supplier as "loss-leaders" or as bait advertising or was making a practice of engaging in misleading advertising in respect of such articles or of not providing services that purchasers of such articles might reasonably expect.

The Act provides for a Director who is responsible for investigating combines and other restrictive practices, and a Commission (the Restrictive Trade Practices Commission) which is responsible for appraising the evidence submitted to it by the Director and the parties under investigation, and for making a report to the Minister. When there are reasonable grounds for believing that a forbidden practice is engaged in, the Director may obtain from the Commission authorization to examine witnesses, search premises, or require written returns. After examining all the information available, if the Director believes that it proves the existence of a forbidden practice, he submits a statement of the evidence to the Commission and to the parties believed to be responsible for the practice. The Commission then sets a time and place at which it hears argument on behalf of the Director in support of his statement, and hears argument and receives evidence on behalf of any persons against whom allegations have been made in the statement. Following this hearing, the Commission prepares and submits a report to the Minister, ordinarily required to be published within thirty days.

The Act also provides for general inquiries into restraints of trade which, while not forbidden or punishable, may affect the public interest. It further provides in Sect. 31 that the courts, including the Exchequer Court of Canada, in addition to imposing punishment for a contravention of the legislation, may make an order restraining persons from embarking on, continuing or repeating a contravention. Application also may be made to the courts for such an order in lieu of prosecuting and convicting for a contravention of the legislation. By virtue of the 1960 amendments, prosecutions for offences against the substantive provisions of the legislation other than Sect. 33C may be taken either in the provincial courts or with the consent of the accused in the Exchequer Court of Canada. The amendment conferring jurisdiction on the Exchequer Court came into force on Dec. 1, 1960.

In the years 1955-60, the following reports of inquiries under the legislation have been published:—

(1) Loss Leader Selling.
(2) Manufacture, Distribution and Sale of Beer in Canada.
(3) Manufacture, Distribution and Sale of Asphalt and Tar Roofings and Related Products in Canada.
(4) Resale Price Maintenance in the Distribution and Sale of Certain Household Appliances.
(5) Manufacture, Distribution and Sale of Transmission and Conveyor Equipment and Related Products.
(6) Retail Distribution and Sale of Coal in Winnipeg.
(7) Manufacture, Distribution and Sale of Quilted Goods, Quilting Materials and Related Products.
(8) Manufacture, Distribution and Sale of Boxboard Grades of Paperboard.
(9) Production, Purchase and Sale of Flue-Cured Tobacco in Ontario.
(10) The Sugar Industry in Western Canada and a Proposed Merger of Sugar Companies.
(11) Manufacture, Distribution and Sale of Metal Culverts and Related Products.
(12) Purchase of Pulpwood in Certain Districts in Eastern Canada.
(13) Manufacture, Distribution and Sale of Yeast.
(14) Production, Distribution and Sale of Zinc Oxide.
(15) Wholesale Trade in Cigarettes and Confectionery in the Edmonton District.
(16) Study of Certain Discriminatory Pricing Practices in the Grocery Trade.
(17) Manufacture, Distribution and Sale of Ammunition in Canada.
(18) Distribution and Sale of Electrical Construction Materials and Equipment in Ontario.
(19) Sale and Distribution of Surgical Rubber Gloves and Certain Other Surgical Supplies.
(20) The Sugar Industry in Eastern Canada.
(21) Resale Price Maintenance in the Distribution and Sale of Gasoline in the Toronto Area.
(22) Manufacture, Distribution and Sale of Specialty Bags and Related Products.
(23) Automobile Insurance in Canada.
(24) Distribution and Sale of Coal in Sault Ste. Marie, Ontario.
(25) Production and Supply of Newspapers in the City of Vancouver and Elsewhere in the Province of British Columbia.
(26) Manufacture, Distribution and Sale of Transparent Packaging Products and Related Products.
(27) Manufacture, Distribution, Supply and Sale of Belts.

These reports and copies of the Annual Reports under the Act may be obtained from the Queen's Printer or the office of the Director of Investigation and Research, Combines Investigation Act, Department of Justice, Ottawa.

Section 3.—Control and Sale of Alcoholic Beverages

The retail sale of alcoholic beverages in Canada is controlled by provincial and territorial government liquor control authorities. Alcoholic beverages are sold directly by most of these liquor control authorities to the consumer or to licensees for resale. However, in some provinces beer and wine are sold directly by breweries and wineries to consumers or to licensees for resale. During the year ended Mar. 31, 1960, provincial government liquor control authorities operated 857 retail stores.

Table 1 shows revenue from administration of liquor control by provincial and territorial governments. Details are given in DBS report, *The Control and Sale of Alcoholic Beverages in Canada* (Catalogue No. 63-202).

1.—Provincial Revenue from Administration of Liquor Control, Years Ended Mar. 31, 1958-60

NOTE.—Figures include revenue collected directly by the provincial and territorial governments as well as revenue of the liquor authorities, but exclude revenue resulting from a general retail sales tax on alcoholic beverages imposed by five provinces.

Year and Province or Territory	Net Income from Sales[1]	Sales Tax	Licences and Permits[2]	Fines and Confiscations[2]	Commission on General Sales Tax Collections	Total
	$	$	$	$	$	$
1958						
Newfoundland	2,125,970	...	1,664,757[3]	28,280	4,191	3,823,198
Prince Edward Island	953,977	291,487	30,161	14,306	...	1,289,931
Nova Scotia	11,472,790	...	286,874	54,418	...	11,814,082
New Brunswick	7,297,721	...	15,048	29,200	19,015	7,360,984
Quebec	30,308,238	1,918,781	13,155,186	246,046	50,119	45,678,370
Ontario	46,761,972	...	21,581,592	166,616	...	68,510,180
Manitoba	8,084,968	...	2,457,896	95,009	...	10,637,873
Saskatchewan	11,534,810	...	56,847	122,937	49,374	11,763,968
Alberta	17,994,383	...	796,646	254,971	...	19,046,000
British Columbia	26,569,948	...	428,210	..	100,470	27,098,628
Yukon Territory	736,818	74,943	7,430	8,157	...	827,348
Northwest Territories	477,554	...	35,233	—	...	512,787
Canada, 1958	**164,319,149**	**2,285,211**	**40,515,880**	**1,019,940**	**223,169**	**208,363,349**
1959						
Newfoundland	2,276,367	...	1,652,233[3]	25,279	4,539	3,958,418
Prince Edward Island	1,017,812	315,057	29,917	15,772	...	1,378,558
Nova Scotia	11,743,828	...	289,279	50,021	...	12,083,128
New Brunswick	7,445,985	...	15,667	32,522	19,142	7,513,316
Quebec	31,422,406	1,979,060	12,989,200	363,399	67,243	46,821,308
Ontario	53,442,922	...	19,537,252	164,458	...	73,144,732
Manitoba	8,817,566	...	2,553,967	88,098	...	11,459,631
Saskatchewan	12,377,526	...	22,902	107,255	52,501	12,560,184
Alberta	18,711,470	...	862,850	237,060	...	19,811,380
British Columbia	26,593,757	...	441,740	..	102,552	27,138,049
Yukon Territory	730,551	74,447	8,710	8,646	...	822,354
Northwest Territories	511,524	...	21,208	—	...	532,732
Canada, 1959	**175,091,714**	**2,368,564**	**38,425,025**	**1,092,510**	**245,977**	**217,223,790**
1960						
Newfoundland	2,482,345	...	1,867,531[3]	25,522	4,741	4,380,139
Prince Edward Island	1,192,128	359,433	34,652	14,517	...	1,600,730
Nova Scotia	11,473,855	...	317,458	58,888	34,572	11,884,773
New Brunswick	7,857,538	...	15,967	38,512	20,589	7,932,606
Quebec	33,426,524	1,989,613	13,905,802	334,820	68,124	49,724,883
Ontario	53,127,425	...	24,645,430	257,035	...	78,029,890
Manitoba	10,088,199	...	2,666,862	125,036	...	12,880,097
Saskatchewan	13,069,942	...	19,995	108,318	54,045	13,252,300
Alberta	18,868,719	...	923,462	287,939	...	20,080,120
British Columbia	26,955,784	...	463,000	..	105,070	27,523,854
Yukon Territory	807,745	75,577	6,965	7,040	...	897,327
Northwest Territories	589,509	...	52,715	—	...	642,224
Canada, 1960	**179,939,713**	**2,424,623**	**44,919,839**	**1,257,627**	**287,141**	**228,828,943**

[1] After provision for depreciation on fixed assets and capital expenditure met out of operating income. [2] Before deducting any payments to municipalities out of liquor control authority revenue. [3] Includes $1,578,317 in 1958, $1,561,594 in 1959 and $1,769,017 in 1960 commission on beer sold direct from local breweries to the public through licensed outlets under controlled prices.

Specified revenue of the Government of Canada from alcoholic beverages comprising excise duties, excise taxes, customs duties and certain fees and licences in that connection are shown in Table **2**.

2.—Specified Revenue of the Federal Government from Alcoholic Beverages, Years Ended Mar. 31, 1956-60

Note.—Figures exclude revenue from the general sales tax which is not available by commodities.

Nature of Levy	1956	1957	1958	1959	1960
	$	$	$	$	$
On Spirits	**104,546,463**	**114,779,730**	**120,279,532**	**125,901,127**	**132,240,228**
Excise duty[1]	61,170,329	70,341,062	83,653,144	96,550,734	102,353,962
Licences	6,500	7,750	7,250	7,000	7,250
Import duty[1]	43,369,634	44,430,918	36,619,138	29,343,393	29,879,016
On Beer	**80,880,028**	**83,221,030**	**88,419,056**	**83,242,835**	**90,873,044**
Excise duty	80,742,806	83,077,741	88,225,546	83,058,147	90,704,392
Beer licences	3,500	3,750	3,250	3,400	2,900
Import duty	133,722	139,539	190,260	181,288	165,752
On Wine	**3,643,584**	**3,881,292**	**4,169,891**	**4,608,764**	**4,686,323**
Excise taxes	2,485,760	2,618,324	2,744,237	3,140,180	3,026,623
Import duty	1,157,824	1,262,968	1,425,654	1,468,584	1,659,700
Totals[2]	**189,070,075**	**201,882,052**	**212,868,479**	**213,752,726**	**227,799,595**

[1] Collections on liquor imported for blending purposes are included with import duty until July 1, 1957.
[2] Drawbacks and refunds of duties and taxes have not been deducted.

Value of Sales of Alcoholic Beverages.—The figures in Table **3** do not always represent the final retail selling price of alcoholic beverages to the consumer because, when sold to licensees, only the selling price to licensees is known.

3.—Value of Sales of Alcoholic Beverages, Years Ended Mar. 31, 1958-60

Province or Territory	Spirits			Wines			Beer			Totals		
	1958	1959	1960	1958	1959	1960	1958	1959	1960	1958	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Newfoundland	5,048	5,279	5,602	440	490	541	9,288	9,236	10,287	14,776	15,005	16,430
Prince Edward Island	2,077	2,215	2,470	151	168	185	979	1,083	1,298	3,207	3,466	3,953
Nova Scotia	15,458	15,616	15,362	2,359	2,328	2,452	13,646	14,336	14,811	31,463	32,280	32,625
New Brunswick	10,296	10,521	11,120	1,810	1,903	2,062	9,040	8,867	9,715	21,146	21,291	22,897
Quebec	78,664	81,818	86,873	12,963	14,151	14,972	97,514	98,574	105,448	189,141	194,543	207,293
Ontario	137,405	158,284	155,557	16,342	19,851	19,356	163,101	147,953	175,298	316,848	326,088	350,211
Manitoba	18,265	19,900	21,240	2,147	2,399	2,614	23,724	24,390	26,691	44,136	46,689	50,545
Saskatchewan	15,960	17,435	18,278	2,107	2,347	2,549	21,432	22,313	22,831	39,499	42,095	43,658
Alberta	30,467	31,591	33,444	2,631	2,884	3,135	29,920	32,209	32,763	63,018	66,684	69,342
British Columbia	50,363	49,868	51,227	4,267	4,616	4,971	38,460	40,167	40,112	93,090	94,651	96,310
Yukon	998	955	968	73	81	96	973	990	1,109	2,044	2,026	2,173
Northwest Territories	734	680	788	57	57	61	448	550	656	1,239	1,287	1,505
Canada	**365,735**	**394,162**	**402,929**	**45,347**	**51,275**	**52,994**	**408,525**	**409,668**	**441,019**	**819,607**	**846,105**	**896,942**

Section 4.—Miscellaneous Aids or Controls

Subsection 1.—Domestic Commerce Service*

Trade Standards.—The Standards Branch of the Department of Trade and Commerce consolidates under one Director the administration of the Electricity Inspection Act, the Gas Inspection Act, the Precious Metals Marking Act, the Weights and Measures Act, and the National Trade Mark and True Labelling Act.

Commodity Standards.—On Nov. 26, 1949, Parliament passed the National Trade Mark and True Labelling Act (RSC 1952, c. 191) which provides a framework for the development of the National Standard and true labelling in order to circumvent public deception in advertising. In brief, the use of the National Standard is voluntary and compliance with commodity standards affects only those manufacturers who desire to use the national trade mark. In addition, where manufacturers descriptively label any commodity or container, it must be labelled accurately to avoid public deception. The regulation applying to the labelling of fur garments, for example, has been established as a code of fair practice throughout the merchandising field.

Under the terms of the Precious Metals Marking Act, 1946 (RSC 1952, c. 215), commodities composed of gold, silver, platinum or palladium may be marked with a quality mark describing accurately the quality of the metal. Where such mark is used, a trade mark registered in Canada, or for which application for registration has been made, must also be applied. Gold-plated or silver-plated articles may also be marked under certain conditions outlined in the Act. The inspection staff of the Standards Branch is engaged in the examination of advertising matter, in verifying the quality of articles offered for sale, and in checking the marks applied.

Weights and Measures.—The Weights and Measures Act (RSC 1952, c. 292) prescribes the legal standards of weight and measure for use in Canada. The Act requires control of the type of all weighing and measuring devices used for commercial purposes and their periodic verification and surveillance directed toward the elimination of sales by short weight or short measure. The number of inspections made in the calendar year 1959 was 479,523 compared with 474,583 in 1958. The more important inspections comprised the following: weighing machines including scales of all kinds, 226,585; measuring machines for liquids, 116,408; weights, 130,644; other measures, 5,886. Total expenditure was $1,111,276 in the year ended Mar. 31, 1960 compared with $1,019,513 in the previous fiscal year and total revenue $1,036,860 compared with $802,149.

Electricity and Gas Inspection.—Responsibilities of the Standards Branch under the Electricity Inspection Act (RSC 1952, c. 94) and the Gas Inspection Act (RSC 1952, c. 129) comprise the testing and stamping of every electricity and gas meter used throughout Canada for billing purposes, the object being to ensure the correct measurement of all electricity and gas sold. Canada is divided into 21 districts for administration of the two Acts and staff numbers 185. During the year ended Mar. 31, 1960, 1,097,124 electricity and gas meters were tested as compared with 1,153,516 in the preceding year. Revenue derived from the testing amounted to $849,462 and expenditure to $960,924.

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* The information on Trade Standards was prepared by the Director of the Standards Branch of the Department of Trade and Commerce, Ottawa, and the material on Product Design and Government Aid to Small Business by the Director of the Trade Publicity Branch of the same Department.

4.—Electricity and Gas Meter Registrations, 1950-59

Year	Electricity Meters	Gas Meters			
		Manufactured Gas	Natural Gas	Petroleum Gas	Total
	No.	No.	No.	No.	No.
1950	3,405,342	610,096	252,468	33	862,602[1]
1951	3,591,056	609,062	264,154	68	873,289[1]
1952	3,779,868	599,140	277,248	1,270	877,663[1]
1953	3,968,020	593,698	298,166	429	892,297[1]
1954	4,175,534	420,432	486,768	532	907,736[1]
1955	4,380,889	416,338	507,875	3,147	927,364[1]
1956	4,571,391	350,558	599,633	4,843	955,034
1957	4,748,636	67,726	943,783	4,570	1,016,079
1958	4,941,667	35,967	1,069,892	5,101	1,110,960
1959	5,157,495	32,799	1,162,678	4,266	1,199,743

[1] Includes five acetylene meters in 1950, 1951 and 1952 and four in 1953, 1954 and 1955.

Product Design.—The Design Branch of the Department of Trade and Commerce administers programs of the National Design Council aimed at stimulating interest in good Canadian product design. The Branch operates closely with the Association of Canadian Industrial Designers and the Association of Professional Industrial Designers of Ontario, as well as with manufacturers and retailers. It organizes travelling exhibitions in Canada and participates in industrial design exhibitions abroad.

Through its close connections with leaders in industry, the Branch administers the Design Award program of the National Design Council. A design award is granted only for products meeting with the high standards of design and quality set by the Council. Photographic and product information records are maintained on each item submitted for a Design Award, as well as on new products for design development. The Branch also administers the Council's scholarship program to encourage the study and teaching of good design in Canada; the scholarships are available only to Canadians.

A bi-monthly bulletin on industrial design is published by the Branch, providing information on scholarships, Council meetings, design awards and exhibitions. A Design Index is published every second year, which includes all approved Canadian designs as well as those that have earned the right to use the design insignia.

Government Aid to Small Business.—The Small Business Branch of the Department of Trade and Commerce provides a liaison between the Federal Government and small business. It is a contact point for businessmen, either individually or through their associations, to explain their problems to the Government; these problems are studied and, in consultation with other departments, recommendations are made where appropriate.

The Small Business Branch is also a clearing house for inquiries on all aspects of business operation, including such matters as the establishment of various types of businesses, capital requirements, licensing regulations, tariffs, taxation and production techniques. The Branch supplies general economic and statistical information on markets, production and related subjects to businessmen who are planning expansions. Inquiries involving technical or specialized knowledge are referred to the appropriate federal departments or agencies. A library and bibliography on all aspects of business management is maintained to assist businessmen on such matters as office procedures, accounting, budgeting and personnel administration.

The Branch also examines the need for pamphlets and books on subjects of interest to businessmen, including information on government procurement, and has published a manual entitled *Selling to the Canadian Government.*

Subsection 2.—Patents, Copyrights and Trade Marks*

Patents.—Letters patent are issued subject to the provisions of the Patent Act (RSC 1952, c. 203), effective since 1935. Applications for protection relating to patents should be addressed to the Commissioner of Patents, Ottawa.

5.—Patents Applied for, Granted, etc., Years Ended Mar. 31, 1956-60

Item		1956	1957	1958	1959	1960
Applications for patents	No.	21,048	21,762	22,257	22,912	24,292
Patents granted	"	11,862	15,513	16,261	18,293	22,021
Granted to Canadians	"	*1,473*[r]	*1,787*[r]	*1,488*[r]	*1,515*	*1,903*
Caveats granted	"	289	245	242	296	291
Assignments	"	17,783	19,124	19,744	20,208	22,015
Fees received, net	$	1,234,810	1,405,136	1,438,218	1,559,705	1,793,685

The number of Canadian patents granted increased fairly steadily each year from 4,522 at the beginning of the century to a peak of 22,021 in the year ended Mar. 31, 1960. Roughly, 70 p.c. of the patents granted were to residents of the United States, 10 p.c. to residents of the United Kingdom and other Commonwealth countries and 7 p.c. to residents of Canada.

Printed copies of patents issued from Jan. 1, 1948 to date are available at a nominal fee. The Canadian *Patent Office Record* gives a brief digest of each patent.

Canadian and foreign patents may be consulted at the Patent Office Library. The Library has records of British patents and abridged specifications thereof from 1617 to date, and of United States patents from 1872 to date, as well as many patents, indexes, journals and reports from Australia, New Zealand, South Africa, India, Pakistan, France, Belgium, Austria, Norway, Mexico, Italy, Sweden, the Netherlands, Switzerland and Japan.

Copyrights, Industrial Designs and Timber Marks.—Registration of copyright is governed by Copyright Act (RSC 1952, c. 55) in force since 1921. Applications for protection relating to copyrights should be addressed to the Commissioner of Patents, Ottawa.

The Act sets out the qualifications for a copyright and its duration: "Copyrights shall subsist in Canada ... in every original literary, dramatic, musical and artistic work, if the author was, at the date of the making of the work, a British subject, a citizen or subject of a foreign country which has adhered to the Berne Convention and the additional Protocol . . . or resident within Her Majesty's Dominions. The term for which the copyright shall subsist shall, except as otherwise expressly provided by this Act, be the life of the author and a period of fifty years after his death."

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* The material relating to patents and copyrights was revised by the Commissioner of Patents, and that relating to trade marks by the Registrar of Trade Marks, Department of the Secretary of State, Ottawa.

Copyright protection is extended to records, perforated rolls, cinematographic films, and other contrivances by means of which a work may be mechanically performed. The intention of the Act is to enable Canadian authors to obtain full copyright protection in Canada, in all parts of the Commonwealth, in foreign countries of the Copyright Union and in the United States of America.

Protection of industrial designs and of timber marks is afforded under the Trade Mark and Union Label Act and the Timber Marking Act. Registers of such designs and marks are kept by the Copyright Branch of the Patent Office.

6.—Copyrights, Industrial Designs and Timber Marks Registered, Years Ended Mar. 31, 1956-60

Item		1956	1957	1958	1959	1960
Copyrights registered	No.	5,151	5,099	5,052	5,331	5,513
Industrial designs registered	"	586	601	665	684	790
Timber marks registered	"	6	9	3	7	—
Assignments registered	"	731	796	735	640	1,037
Fees received, net	$	21,747	21,628	21,986	23,440	24,614

Trade Marks.—The Trade Marks Office, a Branch of the Department of the Secretary of State, administers the Trade Marks Act (SC 1952-53, c. 49) which covers all legislation concerning the registration and use of trade marks and supersedes from July 1, 1954, former legislation enacted under the Unfair Competition Act, the Industrial Design and Union Label Act and the Shop Cards Registration Act. All correspondence relating to an application for registration of a trade mark or for the use of a trade mark should be addressed to the Registrar of Trade Marks, Ottawa.

A *Trade Marks Journal* is published weekly giving particulars of every registration of a trade mark and every registration of a registered user, as well as other advertisements and rulings required under the Act. The required fee payable on application for registration of a trade mark is $25 and for registration of a person as a registered user of a trade mark, $20.

7.—Trade Marks Registered, Years Ended Mar. 31, 1956-60

Item		1956	1957	1958	1959	1960
Trade marks registered	No.	2,911	3,508	3,769	3,992	3,818
Trade mark registrations assigned	"	2,652	1,858	3,078	2,642	2,541
Trade mark registrations renewed	"	2,035	2,002	3,434	1,117	1,481
Certified copies prepared	"	689	716	1,069	906	1,368
Fees received, net	$	326,619	260,305	273,558	268,437	302,164

Subsection 3.—Subventions and Bounties on Coal*

A major problem of the Canadian coal mining industry arises from the fact that its fields are situated far distant from the main consuming markets of the Provinces of Ontario and Quebec while these markets lie in close proximity to the bituminous and anthracite fields of the United States. Transportation subventions, which have been maintained in varying degree during the past 30 years, were designed to further the movement of Canadian coals to some portions of Central Canada by equalizing as far as possible the laid-down costs of Canadian coals with imported coals. Subventions have been regulated by Orders in Council; it has not been considered practicable to fix the assistance by statute because of frequent changes in the competitive situation.

8.—Expenditure for Coal Subventions, by Province, 1956-60

Province		1956	1957	1958	1959	1960
Nova Scotia	ton	2,543,302	2,372,678	2,370,131	2,154,034	2,048,073
	$	6,962,694	7,087,994	8,352,014	11,822,776	12,950,733
New Brunswick	ton	21,359	47,769	120,963	137,613	173,063
	$	42,214	82,770	193,996	253,557	324,922
Saskatchewan	ton	247,814	320,500	297,892	111,006	79,377
	$	215,407	282,718	268,479	96,751	64,248
Alberta and eastern British Columbia	ton	782,228	440,174	216,825	130,956	51,884
	$	2,375,295	1,401,767	666,452	401,820	151,685
British Columbia and Alberta export	ton	1,290	40,560	21,533	192,857	633,913
	$	1,217	87,004	68,982	845,895	2,852,608
Totals	**ton**	**3,595,993**	**3,221,681**	**3,027,344**	**2,726,466**	**2,986,310**
	$	**9,596,827**	**8,942,253**	**9,549,923**	**13,420,799**	**16,344,196**

The Canadian Coal Equality Act (RSC 1952, c. 34), which implemented one of the recommendations of the Royal Commission on Maritime Claims (1926), is designed to assist the Nova Scotia steel industry and only incidentally affects coal. It provides for the payment of 49.5 cents per ton on bituminous coal mined in Canada and converted into coke to be used in the Canadian manufacture of iron and steel. Bounties paid under this authority for the years 1956-60 were as follows:—

Item		*1956*	*1957*	*1958*	*1959*	*1960*
Quantity	ton	654,620	765,352	557,445	604,234	693,581
Amount	$	324,037	378,849	275,935	299,096	343,323

PART III.—BANKRUPTCIES AND COMMERCIAL FAILURES

The two Sections of this Part, although closely related as far as subject matter is concerned, cover different aspects of the field of bankruptcies and commercial failures; thus the statistics presented in each Section are not comparable with those given in the other Section.

Section 1 is limited to the supervision, by the Superintendent of Bankruptcy, of the administration of bankrupt estates under the Bankruptcy Act (including the Farmers' Creditors Arrangement Act). This Section, however, gives definite information on the amounts realized from the assets as established by debtors and indicates that values actually paid to creditors are invariably very much lower than such estimates alone would imply. It can therefore be assumed that this applies in even greater degree to the more extended fields covered in Section 2.

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* Revised by the Administrative Officer .Dominion Coal Board, Ottawa.

Section 2 is limited to bankruptcies and insolvencies made under federal legislation (the Bankruptcy Act and the Winding-Up Act) but does not include failures, sales or seizures carried out apart from such federal legislation. The Dominion Bureau of Statistics coverage was revised from January 1955 to include business failures only (see p. 936). The figures of assets and liabilities are estimates made by the debtor and, because they are not made uniformly, should be accepted with reservations.

Section 1.—Administration of Bankrupt Estates*

Federal insolvency legislation now comprises the Bankruptcy Act 1949 (RSC 1952, c. 14), the Farmers' Creditors Arrangement Act 1943 (RSC 1952, c. 111), the Companies' Creditors Arrangement Act and to some extent the Winding-Up Act. The two Arrangement Acts are designed to avert failure and the statistics in this Section and in Section 2 therefore do not include proposals or arrangements under these Acts. When such proposals or arrangements are rejected by the creditors or fail in their purpose, the proceedings may then come under the Bankruptcy Act, the bankruptcy provisions of the Farmers' Creditors Arrangement Act or, in certain circumstances, the Winding-Up Act. There are no provisions in the Companies' Creditors Arrangement Act for the liquidation or winding-up of insolvent companies.

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* Prepared by the Superintendent of Bankruptcy, Ottawa. Early bankruptcy and insolvency legislation is reviewed in the 1952-53 Year Book, pp. 914-915.

1.—Assets, Liabilities, Assets Realized and Cost of Administration under the Bankruptcy Act, by Province, 1959

Province	Bankruptcies under General Provisions of the Act[1]					
	Estates Closed	Assets as Estimated by Debtors	Liabilities as Estimated by Debtors	Total Realization	Cost of Administration	Paid to Creditors
	No.	$	$	$	$	$
Newfoundland	22	783,799	1,176,939	204,307	65,489	138,818
Prince Edward Island	2	202,763	212,419	111,912	9,250	102,662
Nova Scotia	6	402,048	545,495	133,065	38,197	94,868
New Brunswick	11	184,917	405,575	99,655	20,611	79,044
Quebec	2,049	19,849,366	39,129,218	6,119,768	2,431,267	3,688,501
Ontario	623	10,298,333	22,156,825	2,982,596	1,058,004	1,924,592
Manitoba	44	778,036	1,571,678	316,274	82,055	234,219
Saskatchewan	21	1,059,280	1,400,291	147,170	51,557	95,613
Alberta	80	956,803	1,913,267	192,288	63,028	129,260
British Columbia	65	1,616,510	2,507,516	425,236	114,154	311,082
Totals	**2,923**	**36,131,855**	**71,019,223**	**10,732,271**	**3,933,612**	**6,798,659**[2]

Province	Proposals under Section 27(1) (a) of the Act		
	Proposals Completed	Unsecured Liabilities as Estimated by Debtors	Paid to Unsecured Creditors
	No.	$	$
Newfoundland	2	87,370	37,751
Prince Edward Island	...	...	...
Nova Scotia	3	137,397	66,451
New Brunswick	...	...	...
Quebec	114	6,585,286	1,716,901
Ontario	17	695,633	278,928
Manitoba	...	...	...
Saskatchewan	...	...	...
Alberta	...	...	...
British Columbia	4	173,196	52,209
Totals	**140**	**7,678,882**	**2,152,240**[2]

[1] Includes summary administration provisions of the Bankruptcy Act. [2] In addition to the amount paid to creditors by a trustee, secured creditors realized direct from their security approximately $17,257,607.

Section 2.—Returns under the Bankruptcy and Winding-Up Acts as compiled by the Dominion Bureau of Statistics

The statistics concerning bankruptcies and insolvencies published by the Dominion Bureau of Statistics cover only the failures coming under federal legislation, i.e., the Bankruptcy Act and the Winding-Up Act. Certain documents relating to estates administered under these Acts have, since July 1920, been forwarded to the Dominion Statistician for statistical analysis. The Bankruptcy Act of 1949 altered the administration of bankruptcies by providing for proposals from insolvent persons. Since July 1950, agreements made under this method have not been included with the statistics of bankruptcy, so that subsequent figures are not strictly comparable with those for previous years. Table 2 shows the number of proposals for recent years in order to give a general impression of the trend.

A major revision made in the compilation and presentation of commercial failures statistics by the Dominion Bureau of Statistics extends back to January 1955. The revised series covers business failures only, excluding failures of individuals such as wage-earners, salesmen and executive personnel formerly included. In Tables 2, 3 and 4 figures for the year 1955 are given on both the old and new bases, so as to show the extent to which the series was altered by the revision.

2.—Bankruptcies and Insolvencies under Federal Legislation, by Province, 1950-59

NOTE.—Figures from 1923 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

Year	Atlantic Provinces	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
	No.	No.	No.	No.	No.	No.	No.	No.
1950	48	967	186	16	9	16	61	1,303
1951	44	1,022	227	15	13	14	64	1,399
1952	40	1,167	220	13	8	13	48	1,509
1953	30	1,221	255	27	19	33	72	1,657
1954	45	1,645	414	27	30	44	73	2,278
1955	37	1,789	436	27	39	44	76	2,448
1955[1]	36	1,180	406	27	37	42	67	1,795
1956	37	1,265	507	23	34	41	60	1,967
1957	54	1,359	630	26	32	55	57	2,213
1958	36	1,376	545	28	18	51	71	2,125
1959	36	1,366	658	26	20	47	76	2,229
Proposals—								
1950	2	66	7	1	—	—	3	79
1951	4	160	8	—	—	—	4	176
1952	1	172	15	—	—	—	3	191
1953	—	158	9	2	—	1	1	171
1954	1	416	29	4	1	1	4	456
1955	7	466	36	2	1	1	5	518
1956	9	738	49	2	—	—	14	812
1957	4	479	38	1	1	1	10	534
1958	5	395	44	1	1	1	11	458
1959	3	419	63	2	1	3	12	503

[1] New series not strictly comparable with previous figures; see text above.

3.—Bankruptcies and Insolvencies under Federal Legislation, by Branch of Business, 1950-59

NOTE.—Figures from 1924 are given in the corresponding table of previous Year Books beginning with the 1942 edition.

Year	Agriculture	Forestry, Fishing and Trapping	Mining	Manufacturing	Construction	Transportation, Communications and Storage	Trade	Finance and Public Utilities	Service	Not Classified	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1950	24	7	5	257	97	40	502	20	273	78	1,303
1951	20	8	8	269	126	42	570	27	255	74	1,399
1952	42	2	7	305	114	45	569	32	279	114	1,509
1953	37	6	10	359	124	52	650	30	286	103	1,657
1954	48	17	15	416	135	67	973	41	408	158	2,278
1955	52	8	8	305	287	116	882	44	454	292	2,448
1955[1]	59	3	4	290	309	68	772	14	250	26	1,795
1956	45	10	3	342	375	83	782	28	246	53	1,967
1957	51	14	15	366	372	109	928	40	244	74	2,213
1958	49	9	9	356	367	105	882	42	295	11	2,125
1959	62	11	8	374	449	76	906	36	307	—	2,229

[1] New series not strictly comparable with previous figures; see text on p. 936.

4.—Estimated Liabilities of Bankruptcies and Insolvencies, 1950-59

Year	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia	Total
	$'000	$'000	$'000	$'000	$'000	$'000
1950	1,211	16,065	4,700	1,127	1,769	24,872
1951	947	15,958	5,919	729	2,359	25,912
1952	831	20,249	6,653	621	1,304	29,658
1953	1,692	18,022	8,270	2,841	1,993	32,818
1954	1,029	30,825	15,026	4,675	1,577	53,142
1955	1,855	33,927	16,324	4,196	2,837	59,138
1955[1]	2,248	28,746	16,299	3,939	2,548	53,776
1956	2,049	32,704	21,842	5,223	2,437	64,254
1957	2,508	37,266	31,349	5,683	3,056	79,863
1958	4,493	40,250	17,884	4,672	5,479	72,778
1959	2,302	50,034	34,156	3,866	5,429	95,786

[1] New series not strictly comparable with previous figures; see text on p. 936.

5.—Bankruptcies and Insolvencies by Industries and Economic Areas 1959, with Totals and Liabilities for 1958 and 1959

Industry	1959					Totals		Total Liabilities	
	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia	1959	1958	1959	1958
	No.	No.	No.	No.	No.	No.	No.	$'000	$'000
Agriculture	**3**	**37**	**15**	**4**	**3**	**62**	**49**	**1,715**	**1,246**
Forestry, Fishing and Trapping	**1**	**5**	—	**1**	**4**	**11**	**9**	**544**	**323**
Mining	—	**1**	**3**	**3**	**1**	**8**	**9**	**697**	**440**
Manufacturing	**7**	**251**	**99**	**7**	**10**	**374**	**356**	**23,136**	**16,822**
Foods and beverages	1	19	5	1	1	27	24	750	1,044
Textiles	—	5	—	—	—	5	5	532	368
Clothing	2	42	10	—	—	54	47	3,461	2,255
Wood products	2	34	16	5	2	59	67	2,365	5,027
Paper products and printing industries	—	22	6	—	—	28	21	2,419	546
Iron and steel and transportation equipment	—	82	41	1	6	130	125	7,854	3,267
Electrical apparatus and non-ferrous metals	2	24	12	—	1	39	24	4,487	1,977
Chemical products	—	1	2	—	—	3	1	143	36
Other industries	—	22	7	—	—	29	42	1,125	2,301
Construction	**6**	**251**	**148**	**17**	**27**	**449**	**367**	**21,868**	**16,408**
General contractors	3	86	68	6	14	177	174	11,272	11,475
Special trade contractors	3	165	80	11	13	272	193	10,596	4,933
Transportation, Communications and Storage	—	**41**	**26**	**7**	**2**	**76**	**105**	**1,388**	**3,407**
Trade	**15**	**553**	**281**	**40**	**17**	**906**	**882**	**32,172**	**22,724**
Food	3	136	43	3	1	186	182	4,967	3,457
General merchandise	4	16	5	2	2	29	43	827	1,128
Automotive products	—	45	33	5	2	85	79	7,959	3,622
Filling stations	—	38	22	2	1	63	54	854	711
Clothing	1	72	39	7	5	124	128	2,721	2,418
Shoes	—	15	5	1	—	21	9	582	162
Hardware and building materials	1	41	41	3	2	88	77	3,827	2,586
Furniture, appliances and radios	1	62	43	3	2	111	114	5,714	3,829
Fuel	—	13	1	—	—	14	10	547	431
Drugs	1	5	3	1	—	10	9	393	124
Jewellery	1	18	8	2	—	29	29	742	767
Other	3	92	38	11	2	146	148	3,039	3,489
Finance and Public Utilities	**2**	**17**	**11**	**2**	**4**	**36**	**42**	**5,426**	**2,232**
Service	**2**	**210**	**75**	**12**	**8**	**307**	**295**	**8,840**	**8,373**
Community	—	11	8	—	—	19	14	330	311
Recreational	—	8	5	—	—	13	15	852	957
Business	—	22	10	1	2	35	33	2,593	484
Personal	2	169	52	11	6	240	233	5,065	6,622
Not Classified	—	—	—	—	—	—	**11**	—	**802**
Totals	**36**	**1,366**	**658**	**93**	**76**	**2,229**	**2,125**	**95,786**	**72,777**

PART IV.—PRICES*

Section 1.—Index Numbers of Wholesale Prices

General Wholesale Index.—The term "wholesale prices" refers in this Section to sales transactions that occur below the retail level; it has more of a connotation of bulk purchase than of any homogeneous level of distribution. Ingredients for the general wholesale price index are obtained mainly from manufacturers but include prices from wholesalers proper, assemblers of primary products, agents and the other types of commercial enterprises who trade in commodities of a type or in quantities characteristic of primary marketing functions. Wholesale price indexes are grouped according to a commodity classification scheme based on chief component material similarities. In addition, indexes classified according to degree of manufacture are available. For the latter, however, because significant groups of manufactured products are not directly included, tabulations are not attempted on narrower bases than "Raw and Partly Manufactured" and "Fully and Chiefly Manufactured" commodity groups. Wholesale price indexes are regularly released in the DBS monthly publication *Prices and Price Indexes* (Catalogue No. 62-002) which contains related current series on retail and security prices. Volume 23 of that publication is a historical summary reaching back to the year 1867 for some series and, together with DBS Reference Paper No. 24, *Wholesale Prices Indexes 1913-1950*, contains an explanation of index construction and meaning.

The number and identity of commodities contained in the index has been virtually fixed since 1951 when the index was placed on a 1935-39 base. Commodities were included either because they bulked large in total marketings at that time or because they were considered reliable indicators of price change for commodity groups that did. Price movements displayed by the commodities priced are combined in such a way that they influence composite indexes in the proportions of total marketings including imports and exports during the base period.

General wholesale price indexes have been calculated by most countries for many years but the question "What does a general wholesale price index measure?" cannot be given a precise answer. A retail price index can be identified with consumer expenditure, but a general wholesale index covers a much wider range; yet it is not a measure of the purchasing power of money since it does not include prices of land, labour, securities or services, except in so far as prices of these things enter into commodity prices. As a conventional summary figure, its use has tended toward a reference level against which to observe the behaviour of particular price groups such as farm products, raw materials and building materials. Thus, special wholesale groupings and commodity price relatives are now considered to be of greater importance than the general index itself.

Component indexes and individual price series have numerous uses. One of the most important is in escalator contracts which contain a price adjustment clause. Other major uses include: studies of replacement and construction costs in investment projects; analysis of price movements of both individual items and commodity groups in relation to purchases and sales; industrial planning and market analysis; valuation for tax purposes and inventory analysis; and studies in changes of physical volume. They are also used by business firms abroad in connection with sales and purchases in Canada.

During 1960, the general wholesale index increased moderately to a peak of 232.4 in June, its highest point since 1952, and then eased to 230.4 in December, only slightly above the December 1959 index level of 229.7. As a result, the annual average level of prices in 1960 was practically unchanged from that of 1959. Compared with a year earlier, the December 1960 indexes were lower for five of the eight principal component groups within the general index. The movements of the component indexes during the year were mixed.

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* Revised in the Prices Division, Dominion Bureau of Statistics.

The animal products index declined during the early months of 1960 and, despite a sharp rise in early summer, averaged some 4 p.c. below the 1959 index over the January–September period. During this period prices were lower in 1960 for hides and skins, unmanufactured leather, livestock, fresh meats, cured meats, and beef and veal carcasses. In the last quarter of the year, the index increased 1.5 p.c. in contrast to the sharp 4.3-p.c. drop in the same period of 1959, and in December stood at 255.8, which was 3.4 p.c. above the December 1959 index of 247.4. Higher prices for fishery products, livestock, cured meats and dressed fowl in 1960 were the principal causes of the divergent movements in the final quarters of the two years. Over the year, the animal products index averaged 247.6, which was 2.7 p.c. lower than the 1959 annual average of 254.3.

The textile products index in 1960 ran slightly higher than in 1959. From 228.1 in December 1959, the index advanced to 231.9 in May of 1960 and then eased down to 229.6 in December, 0.6 p.c. above the level of a year earlier. During the first half of 1960, the wood products index averaged slightly higher than in the same period of 1959, and mainly reflected higher prices for wood pulp in the second quarter. From May to September the index dropped 2.2 p.c. from 307.6 to 300.8, with lower prices for wood pulp and sharper declines for fir, cedar and hemlock. It then edged downward to 300.1 at the close of 1960, 1.1 p.c. below the December 1959 index of 303.4. The vegetable products index rose from 200.3 in December 1959 to a high of 206.0 in the second quarter of 1960 before it gradually fell to 199.9 at the close of the year, just 0.2 p.c. below the index of a year earlier. Most of the decrease after the second quarter was attributable to lower prices for grains, livestock and poultry feeds, rubber and its products, and potatoes. Over the year, the 1960 index averaged 203.0 which was 1.8 p.c. higher than the 1959 average of 199.5. The non-ferrous metals index declined 0.5 p.c. from 175.8 in December 1959 to 174.9 in December 1960, as price decreases for copper, lead and zinc and their products in the last half of 1960 outweighed earlier increases for the same commodities. Over the year, however, the 1960 index averaged 177.8, or 1.8 p.c. above the 1959 average of 174.6.

The three remaining principal group indexes—iron products, non-metallic minerals and chemical products—continued fairly steady in 1960 at practically the same levels as in 1959.

Canadian Farm Products Index.—The index of prices of Canadian farm products at terminal markets (on the base 1935-39 = 100) rose from 218.9 in December 1959 to 219.6 in December 1960. The fluctuations over the year were within a narrow range, the high of 229.0 occurring in June. Underlying the price changes were: the strength in livestock, particularly hogs, which commenced in the first quarter; the abrupt drop in August from seasonally high potato prices on Eastern Canada markets; and the major increase in egg prices over the year.

1.—Annual Index Numbers of Wholesale Price Groups 1951-60, and Monthly Indexes 1959 to Mid-1961

NOTE.—Canadian farm products indexes subsequent to July 1960 are subject to revision; other indexes are final to the end of 1960.

(1935-39 = 100)

Year	General Wholesale Index	Raw and Partly Manufactured Goods	Fully and Chiefly Manufactured Goods	Industrial Materials	Canadian Farm Products[1]		
					Field	Animal	Total
1951	240.2	237.9	242.4	296.1	200.4	336.9	268.6
1952	226.0	218.7	230.7	252.6	223.0	277.5	250.2
1953	220.7	207.0	228.8	232.3	179.4	263.8	221.6
1954	217.0	204.8	224.2	223.7	170.9	256.2	213.6
1955	218.9	209.7	224.5	236.0	180.1	245.1	212.6
1956	225.6	215.8	231.5	248.2	181.6	246.9	214.2
1957	227.4	209.4	237.9	240.3	169.2	258.0	213.6
1958	227.8	209.3	238.3	229.8	171.4	274.5	222.9
1959	230.6	210.9	241.6	240.2	173.9	271.6	222.8
1960^{p}	230.8	209.5	242.2	240.4	175.2	264.4	219.8

For footnote, see end of table.

1.—Annual Index Numbers of Wholesale Price Groups 1951-60, and Monthly Indexes 1959 to Mid-1961—concluded

Year and Month	General Wholesale Index	Raw and Partly Manufactured Goods	Fully and Chiefly Manufactured Goods	Industrial Materials	Canadian Farm Products[1]		
					Field	Animal	Total
1959							
January	229.9	211.0	240.5	234.0	168.9	278.7	223.8
February	230.9	212.2	241.2	236.0	168.0	274.0	221.0
March	230.6	211.7	240.9	237.7	167.8	269.5	218.6
April	231.2	211.8	241.9	240.4	168.8	271.0	219.9
May	231.2	212.3	242.0	241.4	178.9	271.0	224.9
June	230.6	211.6	241.4	241.7	185.5	270.6	228.0
July	231.1	211.5	242.1	240.3	185.0	272.8	228.9
August	231.0	211.1	242.3	242.6	176.6	274.9	225.8
September	230.9	210.5	242.5	243.7	168.6	277.0	222.8
October	230.0	208.4	242.2	242.0	170.9	267.9	219.4
November	230.2	210.2	241.5	240.8	173.0	269.1	221.0
December	229.7	208.3	241.4	241.9	174.7	263.1	218.9
1960							
January	230.7	209.0	242.4	243.2	179.5	257.7	218.6
February	230.2	208.6	241.4	241.8	179.7	252.0	215.9
March	229.8	208.1	241.2	240.4	182.8	252.2	217.5
April	231.5	211.0	242.4	241.7	188.3	256.2	222.2
May	231.6	211.0	242.5	243.2	190.1	257.8	223.9
June	232.4	212.9	242.8	242.2	192.9	265.0	229.0
July	232.3	212.4	243.0	240.5	181.3	270.1	225.7
August	230.5	209.1	241.8	240.8	160.9	271.7	216.3
September	230.5	208.8	242.1	241.0	160.7	273.6	217.2
October	230.5	208.6	242.2	238.5	161.9	269.4	215.7
November	229.8	207.2	242.1	236.0	161.8	271.2	216.5
December	230.4	207.3	242.7	235.2	162.7	276.5	219.6
1961p							
January	231.3	208.6	243.8	235.4	163.7	278.5	221.1
February	231.6	208.7	244.6	238.1	163.3	277.7	220.5
March	231.3	207.6	243.8	240.1	162.4	269.9	216.2
April	230.9	207.2	243.5	241.7	162.8	263.1	213.0
May	231.3	208.5	243.4	243.6	161.7	266.0	213.8
June	231.4	209.3	243.2	239.7	166.8	266.3	216.5

[1] Wheat prices used in this index are Canadian Wheat Board buying prices for Nos. 1, 2 and 3 Manitoba Northern at Fort William–Port Arthur. The initial payment is first used and the index revised as further payments are announced. Between August 1945 and July 1950 the price included for No. 1 Manitoba Northern was $1.83 per bushel. For subsequent crop years the price was as follows: 1950-51, $1.85; 1951-52, $1.83; 1952-53, $1.82; 1953-54, $1.56; 1954-55, $1.65; 1955-56, $1.61; 1956-57, $1.586; 1957-58, $1.619; and 1958-59, $1.594. For the crop year 1959-60 the initial payment of $1.40 for Manitoba Northern was increased to $1.50 as of Feb. 14, 1961. Subsequent indexes are based on an initial payment of $1.40. Western oats and barley were brought under control of the Canadian Wheat Board on Aug. 1, 1949. Since then prices used for the Canadian farm products index have been initial payments to farmers, with participation payments included whenever announced.

Index Numbers of Building Materials Prices.—Price movements of materials entering into building construction are currently measured by two special-purpose series: price index numbers of residential building materials and price index numbers of non-residential building materials, for which the base years are 1935-39 and 1949, respectively. Details of weighting and construction and historical series may be found in the special bulletins prepared at the time the indexes were first published.* More recently the composite indexes have been calculated on an annual basis back to 1913; current indexes are published monthly in DBS Bulletin *Prices and Price Indexes* (Catalogue No. 62-002).

The indexes of prices of building materials showed little change over the year 1960. The residential building materials price index (1935-39 = 100) declined almost steadily during the year and, at 293.7 in December, was down from 295.9 a year earlier. The non-residential building materials price index (1949 = 100) moved up from 132.2 in December 1959 to a seasonal high of 132.8 in July and declined thereafter to 132.3 in December, just slightly above the level of December 1959.

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* *Price Index Numbers of Residential Building Materials, 1926-48* (Catalogue No. 62-505) and *Price Index Numbers of Non-residential Building Materials, 1935-52* (Catalogue No. 62-506). Revised item and weighting for the electrical component of the residential building materials index, effective July 1959, is available on request.

2.—Annual Price Index Numbers of Residential Building Materials 1951-60, and Monthly Indexes 1959 to Mid-1961

(1935-39=100)

Year and Month	Composite Index (1949=100)[1]	Composite Index	Principal Components								
			Cement, Sand and Gravel	Brick, Tile and Stone	Lumber and its Products	Lath, Plaster and Insulation	Roofing Material	Paint and Glass	Plumbing and Heating Equipment	Electrical Equipment and Fixtures	Other Materials
GROUP WEIGHT AS A PERCENTAGE OF TOTAL........	...	...	7.6	5.0	42.6	11.3	2.9	3.2	18.6	3.8	5.0
1951............	125.5	286.2	140.9	180.7	425.0	126.3	235.8	197.8	210.4	213.3	212.7
1952............	124.9	284.8	149.5	195.3	415.7	128.5	217.7	194.9	215.6	212.0	226.3
1953............	123.9	282.6	151.8	205.8	410.6	128.5	218.6	203.8	209.0	211.4	229.5
1954............	121.7	277.5	151.3	207.4	400.5	128.8	233.4	208.9	202.8	207.7	226.6
1955............	124.3	283.4	149.4	209.5	409.4	125.3	244.5	219.7	207.2	229.2	230.3
1956............	128.5	292.9	149.7	218.8	420.2	130.8	259.6	226.9	217.9	243.7	243.7
1957............	128.4	292.8	153.6	223.8	415.2	136.9	253.3	225.4	227.6	209.2	253.8
1958............	127.3	290.2	156.8	224.6	409.8	139.8	235.4	226.6	229.8	186.9	254.0
1959............	130.0	296.3	153.8	227.8	421.1	140.9	239.3	229.3	231.6	201.6	256.9
1960............	129.2	294.5	154.1	229.3	416.0	142.6	214.6	230.5	235.3	198.1	262.2
1959											
January.........	128.8	293.6	156.3	226.3	415.8	139.8	247.6	228.7	229.8	194.8	255.7
February........	129.0	294.2	152.3	226.3	417.8	139.8	247.6	228.7	229.8	197.5	254.9
March..........	129.7	295.8	152.2	226.3	421.0	139.8	250.8	228.7	229.8	201.5	254.9
April...........	130.2	296.9	152.0	227.7	421.7	141.9	256.3	228.7	230.7	203.2	256.8
May............	130.9	298.4	152.0	228.4	425.6	141.4	248.9	228.7	231.1	203.3	256.8
June............	130.6	297.7	152.0	228.4	424.0	141.4	248.2	228.7	231.1	203.3	256.8
July............	130.7	298.0	154.7	228.4	424.7	141.2	231.5	228.7	232.8	204.1	256.8
August..........	130.6	297.8	154.7	228.4	424.1	141.2	231.5	228.7	232.8	204.1	257.7
September......	130.1	296.7	154.7	228.4	421.0	141.2	237.9	230.6	232.8	203.5	257.7
October.........	129.8	295.9	154.7	228.4	419.8	141.2	228.7	230.6	232.8	201.4	257.7
November......	129.3	294.8	154.7	228.4	417.6	141.2	222.3	230.6	232.8	201.0	258.5
December.......	129.8	295.9	154.7	228.4	420.4	141.2	220.2	230.6	232.8	201.0	258.5
1960											
January.........	129.9	296.1	154.7	228.4	420.5	141.2	213.8	230.0	234.5	200.4	260.1
February........	129.6	295.6	154.7	228.4	419.0	141.6	217.6	230.0	234.5	199.5	261.8
March..........	129.6	295.6	154.7	229.8	419.0	140.2	217.6	230.0	234.5	199.5	261.8
April...........	129.7	295.7	154.1	229.8	419.6	140.2	214.4	230.0	234.5	199.8	261.8
May............	129.6	295.4	153.5	229.8	418.9	140.2	208.5	230.0	236.0	198.2	261.8
June............	129.6	295.4	153.5	229.8	417.7	143.5	212.3	230.0	236.0	198.5	262.3
July............	129.4	295.0	154.3	229.7	417.1	143.5	212.3	230.0	235.6	195.6	262.3
August..........	128.7	293.4	154.3	229.7	413.3	142.7	212.3	230.0	235.6	197.0	262.3
September......	128.6	293.1	154.3	229.7	412.6	142.7	212.3	230.0	235.5	197.7	262.9
October.........	128.2	292.2	153.7	229.0	410.1	143.1	217.3	230.0	235.5	197.6	263.1
November......	128.5	292.9	153.7	229.0	410.7	146.8	220.8	230.0	235.5	197.6	263.1
December.......	128.8	293.7	153.7	229.0	413.0	145.6	215.6	235.6	235.5	195.6	263.1
1961p											
January.........	128.2	292.2	154.3	229.0	410.5	142.3	216.0	235.6	234.9	195.6	262.3
February........	128.0	291.9	152.6	230.2	409.8	142.3	215.2	235.6	235.8	192.7	262.3
March..........	128.8	293.7	152.6	230.2	414.4	142.3	213.3	235.6	235.8	191.3	262.3
April...........	128.7	293.4	153.2	230.2	413.4	142.3	212.8	235.6	236.2	191.8	262.3
May............	128.3	292.5	153.2	213.4	413.1	142.9	210.2	235.6	236.2	192.7	262.3
June............	129.2	294.5	153.2	213.4	417.5	145.4	203.6	235.6	236.2	193.7	262.3

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[1] Arithmetically converted to base 1949=100 for comparability with price indexes of non-residential building materials shown in Table 3.

3.—Annual Price Index Numbers of Non-residential Building Materials 1951-60, and Monthly Indexes 1959 to Mid-1961

(1949=100)

Year and Month	Composite Index	Principal Components						
		Steel and Metal Work	Plumbing, Heating and Other Equipment	Electrical Equipment and Fixtures	Aggregate, Cement and Concrete Mix	Lumber and Lumber Products	Blocks, Brick and Stone	Tile
GROUP WEIGHT AS A PERCENTAGE OF TOTAL	...	20.1	21.4	11.5	11.1	10.5	9.1	3.8
1951	118.6	122.0	115.7	125.4	111.3	128.3	113.0	110.6
1952	123.2	131.3	121.3	121.7	117.4	127.9	119.7	115.5
1953	124.4	134.7	119.2	119.6	120.2	127.8	125.9	117.1
1954	121.8	128.2	115.2	117.6	120.9	124.5	127.0	120.6
1955	123.4	129.9	118.0	121.3	120.3	127.6	127.0	120.3
1956	128.0	139.0	123.4	123.6	117.0	131.5	130.3	120.8
1957	130.0	147.7	124.1	118.4	119.4	128.7	134.0	118.5
1958	129.8	150.9	123.8	114.0	119.6	126.8	135.7	118.2
1959	131.7	152.6	126.0	119.2	118.6	131.3	137.4	118.3
1960	132.4	152.9	126.6	119.6	119.4	129.0	139.4	120.7
1959								
January	131.3	152.3	125.4	116.4	122.3	127.8	136.6	118.6
February	131.5	152.4	125.4	118.0	120.3	129.3	137.4	117.8
March	131.7	152.4	125.6	118.3	120.3	130.5	137.1	117.9
April	132.1	152.6	126.1	120.4	117.6	131.3	137.4	117.9
May	132.0	152.6	126.2	120.4	115.9	132.6	137.4	117.9
June	131.9	152.6	126.2	120.4	115.9	132.6	137.4	118.0
July	131.9	152.6	126.0	121.4	117.3	132.8	137.4	118.7
August	132.0	152.6	126.2	121.4	117.3	132.9	137.4	118.7
September	131.6	152.6	126.2	118.6	117.3	132.4	137.4	118.7
October	131.1	152.6	126.2	117.2	117.3	131.7	137.4	118.7
November	131.6	152.8	126.4	119.5	119.4	130.8	137.3	118.5
December	132.2	152.9	126.4	119.0	121.7	130.9	138.5	118.5
1960								
January	132.2	152.9	126.5	119.0	121.7	131.1	138.5	118.5
February	132.0	153.0	126.0	118.1	121.7	130.6	138.5	118.2
March	132.2	153.0	126.7	117.8	121.7	130.4	139.7	118.2
April	132.5	152.9	126.9	122.7	119.3	130.4	139.7	118.1
May	132.4	152.9	127.0	122.2	117.1	129.5	139.7	120.9
June	132.5	152.9	127.0	122.2	117.2	129.1	139.7	120.9
July	132.8	152.9	127.0	122.2	117.6	129.1	139.7	122.5
August	132.6	152.9	126.9	122.2	117.6	128.2	139.7	122.5
September	132.3	152.8	126.6	120.4	117.6	127.4	139.7	122.5
October	132.4	152.8	126.4	119.7	118.5	127.2	139.2	122.4
November	132.1	152.8	126.4	114.7	120.2	127.1	139.2	122.1
December	132.3	153.1	126.4	114.6	122.8	127.9	139.2	121.9
1961P								
January	131.8	153.1	125.7	114.6	122.6	127.5	139.5	122.0
February	131.6	153.2	125.9	114.1	122.2	126.7	136.7	122.8
March	131.7	153.2	125.8	114.1	122.2	127.2	137.0	122.8
April	131.4	153.2	126.0	113.6	120.0	128.1	136.8	122.8
May	130.6	153.2	126.6	113.1	118.3	128.4	130.5	122.8
June	130.9	153.3	126.7	113.1	118.3	129.4	130.4	124.4

World Wholesale Price Indexes.—Price changes within different countries have varied widely during the years. Comparisons of Canadian wholesale price indexes with those of other countries are given in Table 4.

4.—Index Numbers of Wholesale Prices in Canada and Other Countries, 1957-59

(Base: 1953=100. Source: *United Nations Monthly Bulletin of Statistics, November 1957, 1958 and 1959.*)

Country	1957	1958	1959	Country	1957	1958	1959
Belgium	106	102	101	Iran	123	119	123
Brazil	197	221	305	Israel	150	153	153
Canada	**103**	**103**	**104**	Korea, South	153	143	147
Chile	646	811r	1,053	Netherlands	107	105	106
Denmark	106	105	105	New Zealand	105	108	109
Dominican Republic	103	103	97	Norway	113	111	111
Egypt	119	118	..	Sweden	110	107	108
France	108	121	126	Switzerland	105	102	100
Germany (Western)	105	106	105	Turkey	164	189	227
Greece	131r	129r	130	United Kingdom	107	101	102
India	104	107	111	United States	107	108	108

Section 2.—Consumer Price Index

The consumer price index is Canada's official measure of retail price change and is defined as measuring the percentage change through time in the cost of purchasing a constant "basket" of goods and services representing the purchases made by a particular population group in a specified time period. This index was recently revised for the fifth time since the inception of series of retail prices in Canada in 1910 and the revised index was introduced in April 1961 in a publication entitled *The Consumer Price Index for Canada (1949=100), Revision Based on 1957 Expenditures* (Catalogue No. 62-518). The primary purpose of the revision was to place the item content and weights on a more current basis. At the same time a review of concepts and methods was carried out and a modification was made in the use of changing seasonal baskets of food in the index budget. The publication referred to contains detailed information on such aspects of the index as purpose, family coverage, base period, items included and their relative importance; it also shows the formulas used in calculating the index, outlines methods of price collection and discusses the conceptual treatment of items such as durables in a consumer price index.

Consumer Price Index Movements.—During the 15 years of almost continuous economic growth following the end of the Second World War there have been several distinct periods of retail price behaviour, the latest of which was in evidence throughout 1959 and 1960. The gradual relaxation of price controls in 1946 combined with consumer demands far in excess of supply brought on a period of rapidly advancing prices, so that between 1946 and 1948 the consumer price index advanced more than 25 p.c. A significant exception to these general price increases was the behaviour of rents which, continuing under some degree of control, increased only 7 p.c. in the same period. Toward the end of 1948, production appeared to be matching consumer demands and, during the slight recession of 1949, consumer prices levelled off. Between the latter months of 1948 and May 1950, retail prices increased only slightly more than 1 p.c. However, with the outbreak of war in Korea in June 1950 came a resurgence of pressure on prices and in the course of the next 18 months further major upward movements took place. The consumer price index rose from 102.7 in July 1950 to 118.1 by December 1951, an increase of 15 p.c. Food advanced sharply from 102.6 to 122.5 or by 20 p.c. The housing component, comprised of shelter and household operation groups, rose from 104.3 to 117.2. The shelter index, based on both home ownership and rents—the latter freed from most of the wartime controls—moved from 107.4 to 118.2, or by about 10 p.c. Household operation, covering such items as furniture, applicances and fuel, rose about the same degree, from 101.6 to 116.4. Clothing experienced a more substantial rise of 16 p.c. from 99.1 to 115.2. The wide variety of goods and services covered in the other groups followed a somewhat similar pattern.

The peak in consumer price levels was reached in January 1952 when the index stood at 118.2, dropping off gradually in the first half of 1952 to reach 115.9 in May, mainly as a result of a drop of about 5 p.c. in the food index. From this point a plateau in retail prices was established which lasted for four years. Over this period, the consumer price index displayed noteworthy stability, ranging narrowly from a low of 114.4 to a high of 116.9. Although the general level of prices remained almost unchanged during this lengthy period, significant variations were taking place around a stable average. Foods recorded mostly seasonal movements during 1953, 1954, 1955 and the first half of 1956. Non-food commodities experienced a decline of about 3 p.c. in a steady gradually downward movement, much of it accounted for by appliances which moved down 17 p.c. On the other hand, rents advanced steadily to stand 13 p.c. higher in May 1956 than in May 1952. The entire group of service items also experienced continuous increases throughout this period.

From May 1956 a distinct change occurred in price patterns. A trend toward higher prices continued through the remainder of 1956 and the first ten months of 1957 and the total index moved up steadily from 116.6 to a new postwar peak of 123.4 in October 1957. Food, which was the component responsible for most of the upward movement at the total index level, rose from 109.3 in May 1956 to 121.9 by September 1957. Housing continued to advance steadily, although at a slightly moderating rate, as did other groups, particularly the service elements. In contrast, clothing prices remained practically unchanged and household operation, continuing to reflect the easy price situation of major household appliances, rose only 2.8 p.c.

The most recent period of upward movement in the consumer price index, which began in mid-1956 and continued throughout 1957, persisted in 1958 but with some evidence of moderating. Over the latter year, consumer prices averaged 2.6 p.c. above 1957, while 1957 prices were 3.2 p.c. above 1956. In the fourth quarter of 1958 consumer prices averaged 2.4 p.c. higher than in the same period a year earlier, while in the fourth quarter of 1957 prices were 2.6 p.c. above the fourth quarter of 1956.

During 1959, the upward movement in the consumer price index was far less marked than in the preceding years. For the year as a whole, the average level of consumer prices increased by 1.1 p.c. as compared with increases of 2.6 p.c. and 3.2 p.c. in 1958 and 1957, respectively. As in the case of the total index, all major groups, with the exception of the food component, averaged slightly higher in 1959 than in 1958. The increases, however, were mostly smaller than in the previous years. The largest increase in 1959, as in earlier years, occurred in the groups other than food, housing and clothing, particularly health and personal care and recreation and reading. Clothing prices were fractionally higher while the housing index increased almost 2 p.c.

The most significant change in the pattern of price movement occurred in food prices which were fractionally lower on average in 1959. This was in marked contrast to increases of 3.0 p.c. in 1958 and 4.6 p.c. in 1957. From 1953 to 1956, the downward movement in food prices had offset increases in other components and provided stability in the total index, a condition that reappeared in 1959.

During 1960, consumer prices continued to reflect the relative stability of the previous year with an over-all price rise of 1.2 p.c. compared with an increase of 1.1 p.c. in 1959 over the year 1958. Changes in six of the seven component groups were quite similar; each of the six were at higher levels compared with 1959 with the increases ranging from 0.9 p.c. for foods to 1.8 p.c. for recreation and reading. The health and personal care component, which in the past has risen faster than any of the other components, again experienced the largest gain in 1960, rising 2.9 p.c. above the 1959 level.

5.—Annual Consumer Price Index Numbers 1951-60, and Monthly Indexes 1959 to Mid-1961

(1949=100)

Year and Month	Food	Housing[1]	Clothing	Transportation[2]	Health and Personal Care[2]	Recreation and Reading[2]	Tobacco and Alcohol[2]	Composite Index
Group weight as a percentage of total	27	32	11	12	7	5	6	100
1951	117.0	113.7	109.8	113.0	111.0	109.7	111.5	113.7
1952	116.8	118.0	111.8	117.4	117.8	115.7	113.3	116.5
1953	112.6	120.0	110.1	119.2	120.1	116.7	108.0	115.5
1954	112.2	121.6	109.4	120.0	124.5	119.5	107.3	116.2
1955	112.1	122.4	108.0	118.5	126.7	122.6	107.4	116.4
1956	113.4	124.2	108.6	123.3	130.0	125.3	107.7	118.1
1957	118.6	126.7	108.5	129.9	138.2	129.8	109.4	121.9
1958	122.1	129.0	109.7	133.8	145.4	138.4	110.6	125.1
1959	121.1	131.4	109.9	138.4	150.2	141.7	114.0	126.5
1960	122.2	132.7	110.9	140.3	154.5	144.3	115.8	128.0
1959								
January	122.3	130.3	109.2	138.6	148.1	140.7	110.9	126.1
February	121.2	130.4	108.8	138.7	147.9	140.7	111.1	125.7
March	120.0	130.6	109.4	138.6	147.9	140.7	111.1	125.5
April	119.3	130.9	109.6	138.5	148.9	140.9	111.1	125.4
May	118.5	131.0	109.7	137.6	149.6	141.9	115.0	125.6
June	119.1	131.3	109.2	138.9	150.2	142.1	115.0	125.9
July	119.2	131.5	109.7	137.0	150.4	141.9	115.0	125.9
August	120.5	131.5	109.7	137.6	150.8	142.0	115.4	126.4
September	122.4	131.8	109.8	137.2	151.1	141.7	115.4	127.1
October	124.2	132.2	110.5	137.1	151.9	141.6	115.8	128.0
November	123.8	132.3	111.4	140.4	152.5	143.3	115.8	128.3
December	122.4	132.5	111.4	140.5	152.5	143.3	115.8	127.9
1960								
January	121.6	132.3	110.2	139.6	153.4	143.1	115.8	127.5
February	120.8	132.3	109.8	139.6	153.8	143.1	115.8	127.2
March	119.4	132.4	110.4	139.8	153.7	143.1	115.8	126.9
April	120.9	132.6	110.8	139.7	154.4	142.7	115.8	127.5
May	120.2	132.5	110.8	140.4	154.6	144.4	115.7	127.4
June	120.8	132.6	110.9	140.7	154.8	144.4	115.7	127.6
July	120.5	132.6	110.8	140.2	154.8	144.5	115.8	127.5
August	121.7	132.7	110.3	140.5	154.7	144.8	115.8	127.9
September	123.3	132.9	110.5	140.0	154.7	144.8	115.8	128.4
October	125.8	133.1	111.2	140.0	155.2	144.9	115.8	129.4
November	125.5	133.2	112.5	141.5	154.8	146.2	115.8	129.6
December	125.3	133.2	112.6	141.4	155.0	146.1	115.8	129.6
1961P								
January	124.4	133.2	111.6	141.1	155.0	146.3	115.8	129.2
February	124.0	133.1	111.5	141.1	154.6	146.7	115.7	128.9
March	124.0	133.2	111.8	141.0	154.4	146.6	115.7	129.1
April	123.9	133.2	111.9	141.0	155.3	145.5	115.8	129.1
May	123.2	132.9	112.4	141.8	155.3	146.0	115.8	129.0
June	123.5	132.9	112.5	141.2	155.0	145.8	115.8	129.0

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[1] Shelter and household operation combined.

[2] Previously combined as "Other Commodities and Services".

Table 6 provides single commodity price relatives on the base 1949=100 for a number of important foods entering into the food component of the consumer price index. It also provides a record of average prices based on the actual average level of prices prevailing in October 1952 and calculated for the other months on the basis of the price relatives.

6.—Urban Average and Relative Retail Prices of Staple Foods 1951-60, and by Month 1959 to Mid-1961

(1949=100)

Year and Month	Beef, sirloin, per lb.		Pork, rib chops,[1] per lb.		Lard, pure, per lb.		Eggs, "A", fresh, per doz.		Milk, fresh, per qt.	
	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative
	cts.		cts.		cts.		cts.		cts.	
1951	101.0	143.5	73.2	114.8	28.4	121.1	71.7	116.5	19.6	110.0
1952	93.4	132.7	63.2	99.0	17.0	72.5	59.1	96.0	21.1	118.4
1953	79.6	113.0	72.5	113.7	20.8	88.4	67.6	109.9	21.1	118.5
1954	77.0	109.4	66.4[1]	116.8[1]	26.3	112.2	57.1	92.9	21.1	118.5
1955	80.0	113.6	61.5	108.2	22.4	95.2	61.5	99.9	21.1	118.5
1956	81.6	115.9	64.4	113.2	21.8	92.9	63.2	102.7	21.2	119.1
1957	84.3	119.7	74.6	131.1	25.6	109.0	56.0	91.0	22.5	126.2
1958	94.4	134.1	72.5	127.4	24.3	103.6	57.9	94.1	23.2	130.4
1959	101.0	143.5	67.6	118.9	18.8	80.3	54.4	88.4	23.4	131.0
1960	97.7	138.8	69.8	122.8	20.0	85.2	54.5	88.6	23.7	133.0
1959										
January	104.9	149.0	68.8	121.0	22.5	95.9	55.0	89.4	23.3	130.9
February	102.4	145.5	68.8	121.0	20.6	87.8	51.7	84.1	23.3	130.9
March	100.1	142.1	68.0	119.6	20.2	86.1	52.6	85.5	23.3	130.9
April	97.6	138.6	67.2	118.2	19.9	84.8	53.3	86.7	23.3	130.9
May	96.4	136.9	66.3	116.6	18.7	79.7	51.5	83.8	23.3	130.9
June	97.8	138.9	66.6	117.1	18.1	77.1	51.0	82.9	23.3	130.9
July	99.4	141.2	67.2	118.2	17.8	75.8	52.3	85.0	23.3	130.9
August	103.2	146.5	68.2	119.9	17.7	75.4	54.5	88.6	23.3	130.9
September	104.6	148.5	67.7	119.1	17.7	75.4	55.4	90.1	23.3	130.9
October	104.4	148.3	67.8	119.2	17.4	74.1	64.3	104.6	23.7	133.1
November	100.8	143.2	67.5	118.7	17.4	74.1	62.7	101.9	23.7	133.1
December	100.6	142.9	67.3	118.4	18.1	77.1	48.3	78.6	23.7	133.1
1960										
January	100.4	142.6	66.4	116.8	18.1	77.1	41.9	68.2	23.7	133.1
February	95.6	135.8	65.6	115.4	17.9	76.3	41.2	66.9	23.7	133.1
March	93.5	132.8	63.5	111.7	18.3	78.0	47.4	77.1	23.7	133.1
April	91.9	130.5	63.3	111.4	18.4	78.4	56.1	91.2	23.7	133.1
May	94.2	133.8	63.6	111.9	18.9	80.5	50.0	81.3	23.7	133.1
June	95.6	135.8	65.1	114.5	19.2	81.8	46.8	76.1	23.7	133.1
July	98.3	139.6	74.0	130.1	19.8	84.4	52.1	84.7	23.7	133.1
August	101.7	144.5	75.1	132.0	20.5	87.3	56.7	92.2	23.7	133.1
September	102.0	144.9	74.5	131.0	21.7	92.5	65.3	106.1	23.7	133.1
October	102.0	144.8	76.5	134.5	22.0	93.7	66.2	107.6	23.7	133.1
November	98.9	140.5	74.7	131.3	22.4	95.4	68.0	110.6	23.7	133.1
December	98.8	140.3	75.3	132.4	22.7	96.7	62.1	100.9	23.5	132.0
1961^{p}										
January	100.1	142.2	76.0	133.6	22.8	97.1	53.5	87.0	23.5	132.0
February	97.9	139.1	74.4	130.8	22.8	97.1	49.4	80.3	23.5	132.0
March	97.2	138.1	74.2	130.5	23.9	101.8	52.2	84.9	23.5	132.0
April	96.8	137.5	70.5	124.0	24.5	104.4	49.3	80.1	23.5	132.0
May	94.6	134.3	68.2	120.0	23.9	101.8	49.1	79.8	23.5	132.0
June	93.9	133.4	71.8	126.3	23.7	101.0	51.0	82.9	23.5	132.0

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[1] "Pork, fresh loins" prior to 1954.

6.—Urban Average and Relative Retail Prices of Staple Foods 1951-60, and by Month 1959 to Mid-1961—concluded

Year and Month	Flour, per lb.		Tomatoes, canned, 2½'s, tin		Potatoes, 10 lb.		Sugar, granulated, per lb.		Bread, per lb.	
	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative
	cts.		cts.		cts.		cts.		cts.	
1951	7.4	106.9	23.1	115.0	34.8	99.9	12.0	129.8	11.7	115.5
1952	7.4	105.9	28.8	143.6	68.6	196.9	11.2	121.0	12.1	119.3
1953	7.6	108.9	24.4	121.8	39.0	111.8	10.0	107.8	12.3	121.5
1954	7.7	110.2	21.5	107.4	37.5	107.6	9.4	101.8	12.8	126.8
1955	7.4	106.4	26.3	131.3	46.8	134.5	9.2	99.7	12.8	126.4
1956	7.6	108.8	27.3	136.1	49.7	142.6	9.3	100.4	13.3	131.6
1957	7.9	113.3	29.1	144.8	42.1	120.8	12.3	133.1	14.3	141.4
1958	8.0	114.3	26.6	132.2	45.7	131.2	10.6	114.4	14.8	146.3
1959	8.4	119.9	27.3	136.1	48.9	140.3	9.4	101.4	15.2	150.9
1960	8.8	125.5	27.8	138.2	58.0	166.5	9.4	101.7	15.6	154.5
1959										
January	8.1	116.2	26.9	134.0	40.5	116.3	10.0	108.4	15.2	150.9
February	8.2	117.6	26.9	134.0	39.9	114.5	10.0	108.4	15.2	150.9
March	8.2	117.6	26.9	134.0	40.1	115.1	9.8	106.2	15.2	150.9
April	8.3	119.1	27.3	136.0	39.3	112.8	9.8	106.2	15.2	150.9
May	8.3	119.1	27.5	137.0	42.9	123.2	9.4	101.9	15.2	150.9
June	8.3	119.1	27.6	137.5	58.1	166.9	9.2	99.7	15.2	150.9
July	8.3	119.1	27.8	138.5	70.9	203.4	9.1	98.6	15.2	150.9
August	8.4	120.5	27.9	139.0	59.4	170.6	9.0	97.6	15.2	150.9
September	8.5	122.0	27.7	138.0	48.7	139.8	9.0	97.6	15.2	150.9
October	8.5	122.0	27.3	136.0	43.9	126.0	9.0	97.6	15.2	150.9
November	8.6	123.4	27.0	134.5	50.4	144.7	9.0	97.6	15.2	150.9
December	8.6	123.4	27.1	135.0	52.2	149.9	9.0	97.6	15.2	150.9
1960										
January	8.6	123.4	27.2	135.5	53.6	153.9	9.1	98.6	15.2	150.9
February	8.7	124.8	27.5	137.0	57.8	166.0	9.1	98.6	15.2	150.9
March	8.6	123.4	27.5	137.0	57.3	164.6	9.1	98.6	15.2	150.9
April	8.7	124.8	27.6	137.5	66.7	191.4	9.2	99.7	15.6	154.9
May	8.7	124.8	27.7	138.0	70.5	202.3	9.2	99.7	15.6	154.9
June	8.7	124.8	27.9	139.0	76.0	218.1	9.3	100.8	15.7	155.9
July	8.7	124.8	28.0	139.5	69.8	200.3	9.3	100.8	15.7	155.9
August	8.8	126.3	28.1	140.0	56.6	162.6	9.5	103.0	15.7	155.0
September	8.8	126.3	28.1	140.0	46.5	123.5	9.7	105.1	15.7	155.9
October	8.9	127.7	28.0	139.5	46.1	132.4	9.7	105.1	15.7	155.9
November	8.9	127.7	27.8	138.5	47.3	135.8	9.7	105.1	15.7	155.9
December	8.9	127.7	27.6	137.5	47.9	137.5	9.7	105.1	15.7	155.9
1961p										
January	8.9	127.7	27.4	136.5	48.6	139.6	9.6	104.1	15.7	155.9
February	8.9	127.7	27.3	136.0	48.2	138.4	9.6	104.1	15.7	155.9
March	8.9	127.7	27.5	137.0	48.4	139.0	9.6	104.1	15.7	155.9
April	8.9	127.7	27.1	135.0	48.6	139.6	9.6	104.1	15.7	155.9
May	8.9	127.7	26.7	133.0	49.9	143.3	9.6	104.1	15.7	155.9
June	8.9	127.7	26.9	134.0	51.4	147.6	9.7	105.1	15.7	155.9

Consumer Price Indexes for Regional Cities.—Table 7 gives regional consumer price indexes for ten cities or city combinations. These indexes do not show whether it costs more or less to live in one city than in another and should not be used for such comparison. Their function is to measure percentage changes in retail prices—over a certain time in each city or city combination—of a fixed basket of goods and services representing the level of consumption of a particular group of families.

7.—Consumer Price Indexes for Regional Cities 1951-60, and by Month 1959 to Mid-1961

(1949=100)

Year and Month	St. John's, Nfld. (1951 =100)	Halifax, N.S.	Saint John, N.B.	Montreal, Que.	Ottawa, Ont.	Toronto, Ont.	Winnipeg, Man.	Saskatoon–Regina, Sask.	Edmonton–Calgary, Alta.	Vancouver, B.C.
1951	..	112.1	114.1	116.1	115.3	115.4	114.6	111.7	113.5	114.3
1952	103.5	115.3	117.4	117.6	116.8	117.5	116.1	112.8	114.8	117.4
1953	102.2	113.2	115.3	116.3	115.0	116.8	114.4	113.1	114.0	116.1
1954	102.8	114.1	116.6	116.8	116.2	118.3	115.3	114.2	114.9	117.4
1955	104.2	114.8	117.7	116.9	117.2	118.8	115.9	114.6	114.6	117.9
1956	106.8	116.1	118.8	118.4	119.2	120.6	117.2	115.8	115.7	119.6
1957	109.4	119.8	122.6	121.8	123.2	125.2	120.0	119.1	118.8	122.6
1958	112.0	122.9	125.3	125.5	125.5	128.6	123.0	122.0	121.4	125.6
1959	114.3	125.9	127.7	126.9	126.9	128.9	123.7	123.1	123.0	127.9
1960	115.5	127.2	129.2	127.9	128.6	130.4	125.6	124.4	124.1	129.0
1959										
January	112.6	124.8	126.7	126.5	126.4	128.9	123.6	122.8	122.5	128.1
February	113.2	125.2	127.0	126.2	126.1	128.5	123.2	122.4	122.2	127.7
March	113.4	125.0	127.0	126.2	125.9	128.2	122.6	122.1	122.2	127.0
April	113.9	125.1	126.8	125.6	125.8	127.9	122.7	121.9	122.0	127.1
May	114.2	125.4	126.9	125.9	126.0	128.1	122.8	122.1	122.0	126.8
June	114.7	125.6	126.9	126.1	126.2	128.5	123.1	122.6	122.2	127.1
July	115.0	125.5	127.0	126.2	126.6	128.1	123.1	122.7	122.6	126.7
August	116.0	126.4	128.1	126.9	127.2	128.8	123.4	123.5	122.8	127.2
September	114.9	126.3	128.3	127.8	127.6	129.4	123.9	124.2	124.0	128.3
October	114.5	127.0	129.0	127.8	128.6	130.3	125.0	124.6	124.5	129.6
November	114.6	127.7	129.2	128.7	128.6	130.5	125.7	124.6	124.7	129.8
December	114.6	127.3	129.1	128.7	128.3	130.1	125.4	124.0	124.1	129.6
1960										
January	114.7	127.1	129.1	127.8	128.1	129.7	124.7	123.8	123.6	129.3
February	114.8	127.0	129.1	127.5	127.6	129.7	124.1	123.5	123.2	129.1
March	114.5	126.7	128.9	126.5	127.4	129.2	124.0	123.4	123.3	128.7
April	115.6	127.0	129.1	127.6	128.0	129.7	124.7	123.6	123.4	128.2
May	115.9	126.8	128.6	127.2	127.7	129.8	124.8	123.4	123.3	128.1
June	116.2	127.0	128.6	127.8	128.6	130.2	125.0	123.7	123.2	127.7
July	116.5	126.4	128.6	127.2	128.2	130.1	125.4	124.0	123.6	127.5
August	116.1	126.7	129.0	127.5	128.3	130.3	125.8	124.8	124.3	128.3
September	114.8	127.1	129.2	127.7	129.0	130.7	126.2	125.6	125.1	129.2
October	115.0	128.1	130.0	129.1	130.2	132.1	127.1	125.7	125.6	130.5
November	115.9	128.4	130.0	129.7	130.2	131.9	127.7	125.5	125.7	130.8
December	116.3	128.4	130.3	129.7	130.1	131.8	127.8	125.4	125.3	130.7
1961[p]										
January	116.2	127.9	130.0	129.4	129.7	131.2	127.3	125.1	125.1	130.3
February	116.2	128.0	129.8	129.4	129.4	131.0	126.9	124.5	124.7	129.9
March	116.5	128.0	129.7	129.0	130.1	130.9	127.0	124.8	124.5	129.6
April	116.8	128.5	129.9	128.7	129.6	130.4	127.0	124.8	124.5	129.9
May	116.7	128.0	129.7	127.9	129.0	130.2	126.6	124.6	124.2	129.1
June	117.0	127.8	129.7	128.3	129.0	130.2	126.7	124.7	124.2	128.4

World Retail Price Indexes.—In order to place changes in Canadian retail prices in perspective with those occurring elsewhere, Table 8 provides retail price indexes for selected countries for 1957, 1958 and 1959. These indexes measure price changes only within each country and should not be used to compare actual levels of living costs from country to country.

8.—Index Numbers of Retail Prices in Canada and Other Countries, 1957-59

(BASE: 1953=100. SOURCE: *United Nations Monthly Bulletin of Statistics, November 1957, 1958* and *1959.*)

Country	1957	1958	1959	Country	1957	1958	1959
Belgium	107	108	110	Iran	139	138[r]	152
Brazil	206	237	326	Israel	135	139	142
Canada	**106**	**108**	**110**	Korea, South	350	339	353
Chile	627	752	1,043	Netherlands	115	117	119
Denmark	116	117	..	New Zealand	113	118	123
Dominican Republic	104	102	102	Norway	112	118	120
Egypt	102	102	..	Sweden	113	119	120
France (Paris)	106	122	129	Switzerland	105	107	106
Germany, Federal Republic of	106	110	112	Turkey	152	171	216
Greece	129	131	134	United Kingdom	116	119	120
India	104	109	114	United States	105	108	109

Section 3.—Consumer Expenditure Surveys

A continuing program of surveys of family income and expenditure in urban areas was begun in 1953 and surveys have been conducted since then at two-year intervals. The primary purpose of these surveys has been to collect information for reviewing and revising, if necessary, the weights of the consumer price index. The surveys have therefore been restricted to cover only those families which were comparable in family composition and income level to the consumer price index target group which was selected for index number purposes from a nation-wide survey conducted in 1947-48. For each of the three survey periods covering 1953, 1955 and 1957, respectively, the program consisted of a series of monthly surveys in which the major objective was the collection of detailed expenditure data on food, followed by a recall survey of all expenditures and income for the same calendar year. Detailed results for each survey have been published in two series of occasional publications, of which the latest are *Urban Family Food Expenditure, 1957*, (Catalogue No. 62-516) and *City Family Expenditure, 1957* (Catalogue No. 62-517).

Tables **9** and **10** give summary data on urban family food expenditure as reported by 1,743 families in five Canadian cities—Halifax, Montreal, Toronto, Winnipeg and Vancouver.*

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* The published report includes separate statistics for St. John's, Nfld.

9.—Average Weekly Food Expenditure in Five Cities, by Food Item, 1957

Item	Halifax	Montreal	Toronto	Winnipeg	Vancouver	Five-City Composite
Average family size	3.38	3.42	3.24	3.46	3.35	3.35
	DOLLARS PER FAMILY					
Dairy products	2.80	2.58	2.67	2.74	2.89	2.70
Eggs	0.87	0.74	0.81	0.72	0.91	0.80
Bakery and cereal products	2.52	3.02	2.88	2.60	2.68	2.81
Meat and poultry	5.33	7.04	5.92	4.87	5.35	5.90
Fish	0.81	0.45	0.50	0.41	0.54	0.50
Fats and oils	1.15	1.11	1.06	1.21	1.12	1.12
Fruits and vegetables	3.32	3.40	3.30	3.13	3.32	3.30
Frozen foods	0.15	0.13	0.28	0.23	0.23	0.22
Other foods	2.52	2.80	2.61	2.76	2.68	2.69
Food away from home	1.57	3.70	2.57	2.10	2.20	2.66
Totals	**21.04**	**24.97**	**22.60**	**20.77**	**21.92**	**22.70**

9.—Average Weekly Food Expenditure in Five Cities, by Food Item, 1957—concluded

Item	Halifax	Montreal	Toronto	Winnipeg	Vancouver	Five-City Composite
	DOLLARS PER PERSON					
Dairy products	0.80	0.74	0.80	0.77	0.83	0.78
Eggs	0.25	0.21	0.25	0.20	0.26	0.23
Bakery and cereal products	0.72	0.86	0.87	0.73	0.77	0.82
Meat and poultry	1.52	2.01	1.78	1.37	1.54	1.71
Fish	0.23	0.13	0.15	0.11	0.16	0.14
Fats and oils	0.33	0.32	0.32	0.34	0.32	0.32
Fruits and vegetables	0.94	0.97	1.00	0.88	0.96	0.95
Frozen foods	0.04	0.04	0.09	0.06	0.07	0.06
Other foods	0.72	0.80	0.79	0.77	0.77	0.78
Food away from home	0.45	1.05	0.77	0.59	0.63	0.77
Totals	**5.94**	**7.10**	**6.79**	**5.80**	**6.29**	**6.56**
	DISTRIBUTION OF FAMILY FOOD DOLLAR					
Dairy products	13.3	10.3	11.8	13.2	13.2	11.9
Eggs	4.1	3.0	3.6	3.5	4.2	3.5
Bakery and cereal products	12.0	12.1	12.8	12.5	12.2	12.4
Meat and poultry	25.3	28.2	26.2	23.4	24.4	26.0
Fish	3.9	1.8	2.2	2.0	2.5	2.2
Fats and oils	5.5	4.5	4.7	5.8	5.1	4.9
Fruits and vegetables	15.8	13.6	14.5	15.1	15.1	14.5
Frozen foods	0.7	0.5	1.3	1.1	1.0	1.0
Other foods	12.0	11.2	11.5	13.3	12.2	11.8
Food away from home	7.4	14.8	11.4	10.1	10.1	11.8
Totals	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

10.—Average Weekly Food Expenditure in Five Cities, by Family Income Group, 1957

Item	Income Group					
	$2,500-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,000	All Families
	DOLLARS PER FAMILY					
Dairy products	2.30	2.77	2.77	2.71	2.77	2.70
Eggs	0.64	0.84	0.81	0.77	0.84	0.80
Bakery and cereal products	2.55	2.89	2.84	2.82	2.79	2.81
Meat and poultry	5.12	5.82	5.99	6.08	6.49	5.90
Fish	0.43	0.47	0.48	0.57	0.59	0.50
Fats and oils	1.02	1.14	1.12	1.10	1.16	1.12
Fruits and vegetables	2.88	3.24	3.37	3.46	3.51	3.30
Frozen foods	0.12	0.17	0.22	0.28	0.37	0.22
Other foods	2.40	2.64	2.83	2.80	2.71	2.69
Food away from home	1.49	2.01	2.57	3.70	4.39	2.66
Totals	**18.95**	**21.99**	**23.00**	**24.29**	**25.62**	**22.70**
	DOLLARS PER PERSON					
Dairy products	0.74	0.78	0.79	0.80	0.81	0.78
Eggs	0.20	0.23	0.22	0.23	0.25	0.23
Bakery and cereal products	0.82	0.82	0.80	0.84	0.81	0.82
Meat and poultry	1.64	1.64	1.70	1.79	1.89	1.71
Fish	0.14	0.13	0.13	0.17	0.17	0.14
Fats and oils	0.32	0.32	0.32	0.33	0.34	0.32
Fruits and vegetables	0.92	0.91	0.96	1.02	1.03	0.95
Frozen foods	0.05	0.05	0.06	0.08	0.11	0.06
Other foods	0.77	0.75	0.80	0.83	0.79	0.78
Food away from home	0.47	0.57	0.73	1.09	1.27	0.77
Totals	**6.06**	**6.20**	**6.48**	**7.13**	**7.37**	**6.56**

10.—Average Weekly Food Expenditure in Five Cities, by Family Group Income, 1957 —concluded

Item	Income Group					
	$2,500-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,000	All Families
	DISTRIBUTION OF FAMILY FOOD DOLLAR					
Dairy products	12.1	12.6	12.0	11.2	10.8	11.9
Eggs	3.4	3.8	3.5	3.2	3.3	3.5
Bakery and cereal products	13.5	13.2	12.4	11.6	10.9	12.4
Meat and poultry	27.0	26.5	26.0	25.0	25.4	26.0
Fish	2.2	2.1	2.1	2.3	2.3	2.2
Fats and oils	5.4	5.2	4.9	4.5	4.5	4.9
Fruits and vegetables	15.2	14.7	14.7	14.2	13.7	14.5
Frozen foods	0.6	0.8	0.9	1.2	1.4	1.0
Other foods	12.7	12.0	12.3	11.5	10.6	11.8
Food away from home	7.9	9.1	11.2	15.3	17.1	11.8
Totals	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Tables **11** and **12** give summary results by city and by income of the survey of complete family expenditure and income which was conducted in January 1958. In this survey families were asked to recall or estimate, at a considerable level of detail, expenditures for all budget categories except food. In addition to the cities represented in Table **9**, St. John's, Trois Rivières, Kitchener–Waterloo and Edmonton were included.

The survey was limited to families of specified composition within the size range of two to six persons and with incomes between $2,500 and $7,000. Average of total family expenditure for 1,088 families in the nine cities was $4,830 or $1,421 per person. Food and shelter costs together accounted for slightly over 40 p.c. of the family budget, 24 p.c. going to food and 17 p.c. to shelter. About 4 p.c. of total family expenditure was for household operation, almost 6 p.c. for furnishings and equipment, and 9 p.c. for clothing. The remaining expenditure on commodities and services amounted to 27 p.c., of which automobile purchase and operation constituted 9 p.c. Outlays not classified as current consumption, representing gifts, contributions, taxes and security, were 13 p.c. of total expenditure.

11.—Average Family Expenditure in Nine Cities, 1957

Item	St. John's	Halifax	Trois Rivières	Montreal	Toronto	Kitchener-Waterloo	Winnipeg	Edmonton	Vancouver	Nine Cities
Number of families	76	79	99	255	213	84	100	90	92	1,088
Average family size	3.87	3.16	3.81	3.45	3.20	3.31	3.29	3.29	3.38	3.40
	DOLLARS PER FAMILY									
Food	1,317	1,074	1,094	1,235	1,214	1,109	1,098	1,129	1,203	1,178
Housing, fuel, light, water	662	887	648	889	965	794	763	748	796	827
Household operation	120	187	142	191	207	174	168	160	174	177
Furnishings and equipment	224	248	227	270	255	251	290	395	335	275
Clothing	397	372	498	465	428	372	394	460	401	430
Other commodities and services	1,005	1,301	1,141	1,310	1,420	1,150	1,319	1,460	1,294	1,294
Gifts and contributions, personal taxes, security	446	745	571	664	714	628	691	657	592	649
Totals	**4,171**	**4,814**	**4,321**	**5,024**	**5,203**	**4,478**	**4,723**	**5,009**	**4,795**	**4,830**

11.—Average Family Expenditure in Nine Cities, 1957—concluded

Item	St. John's	Halifax	Trois Rivières	Montreal	Toronto	Kitchener-Waterloo	Winnipeg	Edmonton	Vancouver	Nine Cities
	Dollars per Person									
Food	340	340	287	358	379	335	334	343	356	346
Housing, fuel, light, water	171	281	170	258	301	240	232	227	236	244
Household operation	31	59	37	55	65	53	51	49	51	52
Furnishings and equipment	58	78	60	78	80	76	88	120	99	81
Clothing	103	118	131	135	134	112	120	140	119	127
Other commodities and services	260	412	299	380	444	347	401	444	383	380
Gifts and contributions, personal taxes, security	115	236	150	192	223	190	210	200	175	191
Totals	**1,078**	**1,524**	**1,134**	**1,456**	**1,626**	**1,353**	**1,436**	**1,523**	**1,419**	**1,421**
	Percentage Distribution									
Food	31.6	22.3	25.3	24.6	23.3	24.8	23.2	22.5	25.1	24.4
Housing, fuel, light, water	15.9	18.4	15.0	17.7	18.5	17.7	16.2	14.9	16.6	17.1
Household operation	2.9	3.9	3.3	3.8	4.0	3.9	3.6	3.2	3.6	3.7
Furnishings and equipment	5.4	5.1	5.2	5.4	4.9	5.6	6.1	7.9	7.0	5.7
Clothing	9.5	7.7	11.5	9.2	8.2	8.3	8.3	9.2	8.4	8.9
Other commodities and services	24.0	27.1	26.5	26.1	27.3	25.7	28.0	29.2	27.0	26.8
Gifts and contributions, personal taxes, security	10.7	15.5	13.2	13.2	13.8	14.0	14.6	13.1	12.3	13.4
Totals	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

12.—Average Family Expenditure in Nine Cities, by Income Group, 1957

Item	Income Group								
	$2,500-$2,999	$3,000-$3,499	$3,500-$3,999	$4,000-$4,499	$4,500-$4,999	$5,000-$5,499	$5,500-$5,999	$6,000-$6,499	$6,500-$7,000
	Dollars per Family								
Food	961	1,037	1,083	1,147	1,161	1,245	1,280	1,313	1,397
Housing, fuel, light, water	638	662	758	743	818	914	949	942	1,083
Household operation	131	136	156	153	183	199	196	212	248
Furnishings and equipment	177	167	206	262	317	329	344	296	346
Clothing	275	295	343	390	441	463	507	551	648
Other commodities and services	782	748	1,112	1,187	1,246	1,438	1,516	1,728	2,024
Gifts and contributions, personal taxes, security	195	308	449	554	683	754	901	974	1,079
Totals	**3,159**	**3,353**	**4,107**	**4,436**	**4,849**	**5,342**	**5,693**	**6,016**	**6,825**
	Dollars per Person								
Food	290	309	330	328	336	357	378	400	411
Housing, fuel, light, water	193	197	231	213	236	262	280	287	318
Household operation	40	40	48	44	53	57	58	65	73
Furnishings and equipment	53	50	63	75	92	94	101	90	102
Clothing	83	88	105	112	127	133	149	168	191
Other commodities and services	236	222	339	340	360	412	447	527	595
Gifts and contributions, personal taxes, security	59	92	137	159	197	216	266	297	317
Totals	**954**	**998**	**1,253**	**1,271**	**1,401**	**1,531**	**1,679**	**1,834**	**2,007**

12.—Average Family Expenditure in Nine Cities, by Income Group, 1957—concluded

Item	Income Group								
	$2,500-$2,999	$3,000-$3,499	$3,500-$3,999	$4,000-$4,499	$4,500-$4,999	$5,000-$5,499	$5,500-$5,999	$6,000-$6,499	$6,500-$7,000
	PERCENTAGE DISTRIBUTION								
Food	30.4	30.9	26.4	25.8	23.9	23.3	22.5	21.8	20.5
Housing, fuel, light, water	20.2	19.8	18.5	16.7	16.9	17.1	16.7	15.7	15.9
Household operation	4.2	4.1	3.8	3.4	3.8	3.7	3.4	3.5	3.6
Furnishings and equipment	5.6	5.0	5.0	5.9	6.5	6.2	6.0	4.9	5.1
Clothing	8.7	8.8	8.3	8.8	9.1	8.7	8.9	9.1	9.5
Other commodities and services	24.7	22.2	27.1	26.9	25.7	26.9	26.7	28.8	29.6
Gifts and contributions, personal taxes, security	6.2	9.2	10.9	12.5	14.1	14.1	15.8	16.2	15.8
Totals	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Section 4.—Index Numbers of Security Prices

Investors price indexes for common stocks are calculated on the 1935-39 base and published weekly and monthly for a sample of issues, broadly classified under the headings: industrials, public utilities and banks. Within the first category the sample is further classified by industry. Weekly and monthly indexes of mining stocks including both golds and base metals are calculated and published separately, as are monthly indexes of preferred stocks.

For purposes of index calculation, Thursday closing prices are used for the issues of companies listed on either or both the Montreal and Toronto stock exchanges. Weights are applied to each issue on the basis of the number of shares currently outstanding. The list of stocks included in the various security series, currently totalling 93 for the investors index and 27 for the mining stocks index, are revised annually so that issues that have become important in stock market activity may be included and those of declining interest removed. Provision is also made for stock splits, mergers and the exercise of 'rights'. The indexes are designed to reflect weekly and monthly changes of interest to the investor rather than day-to-day changes of more speculative interest. For that reason the historical record of indexes dating back to January 1914 on a monthly basis* is of significance in any analysis of the degree of fluctuation in stock prices through time.

Investors Index.—A continuation of the strong upward trend inaugurated with the inception of the bull market in December 1953 culminated in an all-time peak in the investors total index of 291.8 in August 1956; the September 1929 peak was 197.8. Subsequent sharp declines that brought the level to 262.3 by November 1956 were reversed in December, and by May 1957 losses had been largely recouped. In mid-1957 prices broke sharply and commenced a seven-month slide to 215.4 by January 1958. At this point the index swung upward to 262.1 in October, continued slowly higher to 279.3 in July 1959, only to break sharply in September. Later it fluctuated moderately, touching a low of 241.7 in October 1960, after which the index strengthened to close the year at 260.2. Among major groups the January–December 1960 changes were as follows: industrials moved up 0.1 p.c., reflecting sub-group gains headed by food and allied products and industrial mines, which were partially offset by sub-group losses led by building materials, textiles and clothing, and machinery and equipment; utilities rose 1.0 p.c., reflecting an increase for telephones and declines for transportation, power and traction; banks rose 1.6 p.c. In the opening months of 1961 continued index strength brought pulp and paper, industrial mines, and telephones to all-time high levels.

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* Available on request from Prices Division, Dominion Bureau of Statistics.

13.—Investors Index Numbers of Common Stocks, by Month, 1959 to Mid-1961

(1935-39=100)

Year and Month	Industrials										Public Utilities				Banks, Total	Investors Composite Index
	Machinery and Equipment	Pulp and Paper	Milling and Grains	Oils	Textiles and Clothing	Food and Allied Products	Beverages	Building Materials	Industrial Mines	Industrials, Total	Transportation	Telephone	Power and Traction	Utilities, Total		
1959																
January	690.9	1,077.2	198.5	216.7	194.9	286.4	666.7	518.6	185.2	275.4	345.9	109.1	232.4	198.9	327.6	266.0
February	674.4	1,131.8	200.6	215.4	205.0	302.6	678.4	535.3	191.0	279.1	355.6	112.2	231.4	202.0	335.8	269.9
March	682.7	1,139.8	199.2	209.6	213.9	301.8	666.0	544.7	194.2	278.3	361.1	109.4	237.1	202.6	345.9	270.2
April	666.2	1,117.4	198.4	204.8	215.9	299.6	662.1	529.8	186.0	271.7	350.7	109.5	237.0	201.3	357.1	265.8
May	686.6	1,109.8	211.0	200.0	215.4	292.0	670.6	526.6	189.2	271.5	345.8	115.7	232.9	204.3	370.4	267.2
June	776.4	1,119.6	230.9	189.9	219.8	279.2	677.7	537.1	192.4	274.4	343.0	115.1	227.0	201.6	379.0	269.5
July	834.3	1,183.7	239.9	192.9	227.5	273.7	702.7	580.1	202.2	286.2	345.8	115.4	229.8	203.0	387.5	279.3
August	794.0	1,169.2	232.0	193.0	230.1	264.2	702.4	564.6	201.9	282.0	332.6	113.9	228.3	199.8	373.7	274.6
September	741.3	1,086.0	221.2	176.7	211.4	251.7	656.7	523.0	187.3	261.6	312.8	109.6	211.7	188.9	347.6	255.4
October	744.9	1,090.8	207.5	168.4	205.7	245.1	652.5	514.3	187.0	257.4	307.3	109.1	210.2	187.3	354.7	252.5
November	706.3	1,123.5	209.8	168.4	206.4	232.4	668.3	529.1	197.1	259.2	295.7	110.9	208.7	186.9	342.5	252.8
December	744.7	1,174.5	208.5	174.8	209.7	231.2	667.5	536.1	210.9	269.3	296.3	114.9	210.5	190.6	347.2	261.5
1960																
January	741.9	1,156.8	204.2	180.2	203.2	224.5	656.0	518.0	205.5	267.6	302.0	115.6	207.9	191.0	332.8	259.2
February	713.0	1,080.0	194.0	173.8	197.2	216.8	634.6	488.7	203.1	257.9	298.6	115.8	195.3	186.8	316.3	249.9
March	671.4	1,058.1	181.5	170.8	190.0	215.8	611.0	462.2	195.6	249.3	287.6	116.9	189.8	184.5	305.8	242.3
April	682.2	1,101.4	181.8	173.2	189.1	230.0	625.6	469.2	206.9	256.7	306.4	119.3	188.1	188.2	309.1	248.8
May	699.2	1,124.7	184.8	168.0	190.9	224.5	632.5	466.7	211.2	257.4	304.8	119.0	189.2	188.1	308.8	249.2
June	685.7	1,156.6	190.6	165.4	189.5	228.0	643.3	455.8	217.6	258.3	302.2	120.4	194.8	190.6	317.7	251.0
July	636.7	1,111.7	182.5	161.9	183.6	233.6	638.9	423.2	213.0	249.8	287.6	121.0	188.8	187.3	311.5	243.6
August	651.2	1,124.7	189.8	172.0	180.0	239.3	641.7	424.4	215.3	255.3	289.6	123.8	194.8	191.6	322.9	249.3
September	645.6	1,127.2	200.0	175.5	180.7	245.4	646.7	425.2	206.1	254.2	277.8	124.8	197.2	191.7	329.3	248.9
October	634.9	1,083.3	201.0	169.8	171.6	245.4	634.4	416.0	195.8	246.5	262.4	123.7	193.8	187.8	318.6	241.7
November	642.5	1,093.0	210.9	180.9	181.0	248.8	674.2	417.4	213.8	258.0	261.4	125.4	191.1	188.2	328.5	251.1
December	681.9	1,121.6	210.3	183.2	181.9	258.9	697.7	420.0	228.6	268.0	266.9	126.9	200.4	193.0	338.1	260.2
1961p																
January	727.7	1,190.1	211.7	200.4	189.5	272.3	720.1	456.4	243.5	286.0	276.5	130.7	212.1	200.7	358.7	276.6
February	741.4	1,223.8	219.2	208.9	193.0	280.1	756.3	470.3	252.1	295.7	289.3	131.8	220.8	205.9	364.8	285.3
March	758.9	1,277.7	227.4	217.3	195.9	287.7	793.0	486.8	264.2	307.4	290.0	132.1	221.1	206.2	371.8	294.6
April	801.0	1,283.2	226.0	227.8	202.2	303.0	806.8	491.3	280.1	319.6	297.4	134.6	220.2	208.8	371.6	304.8
May	809.3	1,282.5	241.0	231.7	210.4	322.6	855.6	490.9	311.7	333.4	321.7	145.4	221.8	220.7	383.4	317.6
June	781.6	1,294.0	247.8	229.4	213.5	321.4	872.1	499.4	306.5	330.9	324.9	148.7	220.0	223.2	385.5	316.4

Four supplementary indexes of common stock prices, relating to important categories of stocks not covered by existing series, were introduced in May 1960. These are published as interim indexes pending complete revision of the security price indexes. The price reference date for the new series is 1956; construction and weighting methods conform to those of existing indexes. Between January and December of 1960, changes for these indexes were: primary oils and gas, −32.8 p.c.; uraniums, −12.3 p.c.; pipelines, −7.0 p.c.; and investment and loan, +9.6 p.c. For comparison, Table **14** shows related existing series from Table **13** converted to the 1956 = 100 base.

14.—Index Numbers of Common Stocks, by Month, 1959 to Mid-1961

(1956=100)

Year and Month	Utilities[1]	Pipelines	Banks[1]	Investment and Loan	Mining[1]	Uraniums	Industrial Oils[1]	Primary Oils and Gas
1959								
January	96.4	119.4	118.8	129.5	92.0	95.3	98.0	93.3
February	97.9	118.0	121.8	132.9	92.9	92.3	97.4	92.9
March	98.2	112.7	125.4	133.3	94.2	88.2	94.8	84.8
April	97.6	120.0	129.5	128.4	89.7	94.9	92.6	84.3
May	99.0	119.2	134.3	127.4	88.9	89.3	90.5	81.1
June	97.7	114.9	137.4	128.2	88.8	81.8	85.9	75.5
July	98.4	121.4	140.5	134.9	89.7	88.8	87.2	77.7
August	96.8	120.7	135.5	134.7	89.1	84.3	87.3	77.4
September	91.6	109.6	126.0	123.0	83.0	71.5	79.9	66.7
October	90.8	115.4	128.6	118.1	83.5	73.9	76.2	61.0
November	90.6	116.8	124.2	120.4	83.8	68.1	76.2	59.8
December	92.4	118.8	125.9	122.9	83.9	63.2	79.1	58.1
1960								
January	92.6	118.0	120.7	118.5	85.1	68.2	81.5	60.7
February	90.5	110.4	114.7	110.8	82.1	62.8	78.6	56.9
March	89.4	109.6	110.9	110.5	79.9	58.8	77.3	55.0
April	91.2	107.2	112.1	114.6	78.2	58.9	78.3	53.4
May	91.2	102.9	112.0	115.8	72.9	57.3	76.0	47.3
June	92.4	99.5	115.2	119.9	71.5	53.9	74.8	44.6
July	90.8	96.4	113.0	119.2	71.0	55.4	73.2	42.2
August	92.9	99.8	117.1	123.3	75.4	55.1	77.8	44.4
September	92.9	106.0	119.4	128.2	77.4	57.4	79.4	46.1
October	91.0	105.7	115.5	123.1	79.9	59.5	76.8	44.1
November	91.2	109.7	119.1	123.8	82.0	62.0	81.8	43.0
December	93.6	109.7	122.6	129.9	80.7	59.8	82.1	40.8
1961^{p}								
January	97.3	116.4	130.1	136.7	86.0	65.2	90.6	46.4
February	99.8	121.0	132.2	145.3	82.5	65.8	94.5	55.0
March	99.9	127.6	134.8	154.4	83.5	68.6	98.3	60.0
April	101.2	137.9	137.0	164.8	86.7	70.0	103.0	59.9
May	107.0	142.1	139.0	175.9	91.1	71.6	104.8	60.2
June	108.2	137.8	139.8	179.6	90.7	71.5	103.7	58.2

[1] Converted to 1956 = 100 base for comparability; see Table 15.

Mining Stocks.—Mining stocks in 1960 continued the downward trend evident throughout 1959, reaching 95.5 at July after which gains occurred which brought the index to 108.5 at the year-end; the net loss was 5.2 p.c. from 114.4 in January 1960. Base metals at 178.2 in December were down 5.1 p.c. from 187.8 in January and golds declined from 82.4 to 78.1, a drop of 5.2 p.c

15.—Weighted Index Numbers of Prices of Mining Stocks, by Month, 1957 to Mid-1961

(1935-39=100)

Year and Month	Golds	Base Metals	Composite
1957			
January	70.6	265.7	129.9
February	69.3	243.2	122.2
March	68.1	249.6	123.3
April	72.4	255.4	128.0
May	76.2	234.2	124.2
June	80.6	227.7	125.4
July	79.3	222.2	122.8
August	73.2	192.6	109.5
September	71.4	180.7	104.6
October	63.4	167.2	95.0
November	61.2	167.0	93.4
December	60.0	156.8	89.4
1958			
January	64.0	154.6	91.5
February	68.3	157.2	95.3
March	67.8	161.7	96.4
April	69.0	155.0	95.2
May	72.5	160.7	99.3
June	73.8	173.3	104.1
July	72.1	174.7	103.2
August	74.3	179.3	106.2
September	73.8	182.0	106.7
October	74.7	205.1	114.4
November	77.9	208.8	117.6
December	80.6	197.5	116.1
1959			
January	85.6	211.2	123.7
February	85.7	214.8	124.9
March	86.1	219.4	126.6
1959—concluded			
April	85.5	201.2	120.6
May	87.0	194.0	119.5
June	87.0	193.4	119.4
July	87.3	196.9	120.6
August	86.1	196.9	119.8
September	82.0	179.2	111.5
October	82.7	179.9	112.2
November	82.6	181.3	112.6
December	82.3	182.8	112.8
1960			
January	82.4	187.8	114.4
February	82.0	175.6	110.4
March	82.5	164.4	107.4
April	78.4	166.4	105.1
May	67.8	167.2	98.0
June	64.9	167.4	96.0
July	64.7	166.0	95.5
August	71.4	169.9	101.4
September	73.5	173.8	104.0
October	79.9	170.3	107.4
November	81.2	176.9	110.2
December	78.1	178.2	108.5
1961[p]			
January	83.9	188.0	115.5
February	75.9	190.8	110.8
March	72.4	203.6	112.3
April	72.1	218.2	116.6
May	73.6	234.4	122.5
June	73.8	232.1	121.9

Preferred Stocks.—The index of preferred stocks in 1960 continued through April in the closing stages of a slump which had commenced in August 1959, but in May moderate strength set in which brought the index to 156.8 in December for a net gain of 5.1 p.c. from 149.2 in January.

16.—Index Numbers of Preferred Stocks, by Month, 1951 to Mid-1961

(1935-39=100)

NOTE.—Figures for 1927-45 are given in the 1948-49 Year Book, p. 958, and for 1946-51 in the 1956 edition, p. 1045.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Av.
1952	161.4	160.6	159.5	157.2	157.2	157.7	159.8	163.6	162.4	161.2	160.3	160.7	160.1
1953	161.0	161.6	163.6	161.6	162.9	163.0	163.8	164.3	162.0	161.0	161.6	161.7	162.3
1954	162.6	163.6	165.4	168.0	169.7	170.7	171.3	173.0	173.4	174.1	175.4	175.4	170.2
1955	175.6	176.0	176.2	175.4	176.1	177.9	179.5	179.9	179.0	179.2	176.6	173.9	177.2
1956	175.5	175.3	173.6	171.1	167.7	166.2	167.5	166.1	161.7	158.7	157.0	154.4	166.2
1957	155.9	156.4	154.8	153.4	153.1	150.8	150.0	149.4	147.3	146.1	147.6	151.1	151.3
1958	154.0	156.4	157.5	158.5	161.6	163.9	162.4	163.4	163.9	162.7	162.7	159.8	160.6
1959	158.1	159.5	159.8	160.0	161.9	160.5	160.8	159.2	155.3	151.0	150.1	149.9	157.2
1960[r]	149.2	148.7	147.2	146.6	148.9	152.4	155.1	156.4	157.5	157.5	157.3	156.8	152.8
1961[p]	157.9	158.2	157.9	158.2	157.7	159.6	161.4	162.3	..	..	..	..	..

CHAPTER XX.—FOREIGN TRADE

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

The subject of foreign trade covers more than the treatment of exports and imports of commodities, important though this is. In its broader sense foreign trade is made up of the total international interchange of goods, services, securities and other financial transactions, all of which are presented in their appropriate relationship in this Chapter. Following Part I, which is a review of Canada's trade during recent years, Part II gives detailed statistics of external commodity trade. Part III summarizes external transactions from the standpoint of the balance of international payments. Part IV outlines the various ways in which the Federal Government promotes and encourages trade relationships, and contains a brief review of the Canadian tariff structure.

PART I.—RECENT DEVELOPMENTS IN CANADA'S FOREIGN TRADE*

Canada's total trade with other countries reached a new peak in 1960. The combined value of exports and imports for the year totalled $10,887,600,000, an increase of 2.2 p.c. over the previous record of $10,649,200,000 attained in 1959. Total exports (domestic exports and re-exports) in 1960 were valued at $5,395,300,000, a rise of 5 p.c. over the 1959 figure; imports, valued at $5,492,300,000, were only fractionally below the high level of the preceding year. The import balance, at $97,100,000, was reduced to slightly more than one-quarter of that for 1959 and was the lowest since 1954. This situation developed unevenly throughout the year, with exports climbing irregularly but with lesser impetus at the close and imports tending to decrease somewhat in the last half of the year.

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* Prepared in the External Trade Section, International Trade Division, Dominion Bureau of Statistics.

Over the five-year period from 1956 to 1960, export and import prices remained relatively steady. During 1960, the average price levels of domestic exports and of imports showed small advances and, as import prices increased more than export prices, the terms of trade were slightly less favourable. The physical volume of domestic exports rose at approximately the same rate as their value and the physical volume of imports declined somewhat more than their value. Table 1 traces the movements in Canadian trade totals and in the indexes of price and volume over the past five years, and also shows percentage changes during 1958 and 1959.

1.—Summary Statistics of Canada's Foreign Trade, 1956-60

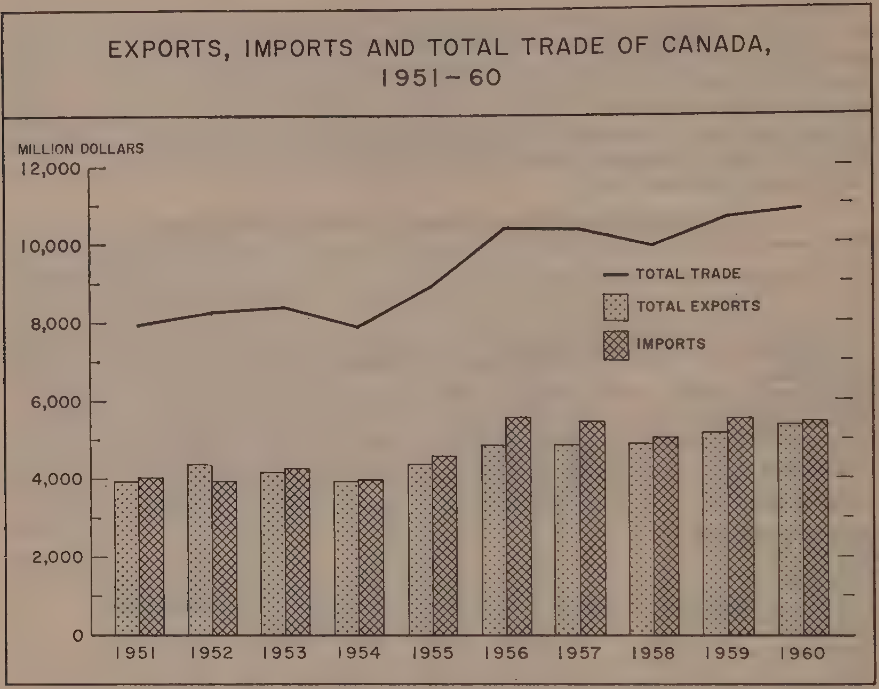
Item	1956	1957	1958	1959	1960	Change	
						1958 to 1959	1959 to 1960
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000	p.c.	p.c.
Value of Trade—[1]							
Total exports	4,833.8	4,884.1	4,894.3	5,140.3	5,395.3	+ 5.0	+ 5.0
Domestic exports	*4,760.4*	*4,788.9*	*4,791.4*	*5,021.7*	*5,264.1*	*+ 4.8*	*+ 4.8*
Re-exports	*73.3*	*95.3*	*102.9*	*118.6*	*131.2*	...	...
Imports	5,547.0	5,473.3	5,050.5	5,508.9	5,492.3	+ 9.1	− 0.3
Total Trade	**10,380.7**	**10,357.5**	**9,944.8**	**10,649.2**	**10,887.6**	**− 7.1**	**+ 2.2**
Trade Balance	**−713.2**	**−589.2**	**−156.1**	**−368.6**	**−97.1**	...	...
Price Indexes (1948=100)—							
Domestic exports	121.4	121.0	120.6	122.8	123.2	+ 1.8	+ 0.3
Imports	113.0	116.4	116.5	114.4	116.1	− 1.8	+ 1.5
Terms of trade	107.4	104.0	103.5	107.3	106.1	+ 3.7	− 1.1
Volume Indexes (1948=100)—							
Domestic exports	128.5	129.3	130.4	134.2	140.3	+ 2.9	+ 4.5
Imports	187.5	179.6	165.6	183.9	180.7	+11.1	− 1.7

[1] Revised to cover the adjustment for "Special Transactions—Non-Trade" (see p. 967).

The general trend of Canada's trade during the past decade is pictured in the chart on p. 960 and the higher level of both exports and imports attained during the past five years is noticeable. Canada, as one of the leading countries engaged in world trade, is vitally concerned with economic developments in the international field. Following the very large increases in 1955 and 1956, the total value of Canadian trade reached a new plateau. In 1957 and 1958 exports were virtually unchanged and there was considerable decline in imports in 1958 but in 1959 and 1960 exports began climbing again and imports generally regained their earlier level.

During 1959 and extending into the first part of 1960, international trade and economic activity increased among the more industrialized nations—particularly in Western European countries, the United States and Japan. The latter part of 1960 saw some decline in production in the United States and the United Kingdom, and in Western Europe and Japan the rate of advance was slower toward the close of the year. In addition, the primary producing countries were confronted with a considerable decrease in the purchasing power of their basic export commodities. Nevertheless, Canadian exports to most main regions and to practically all leading countries, with the exception of the United States, India and Venezuela, expanded in 1960.

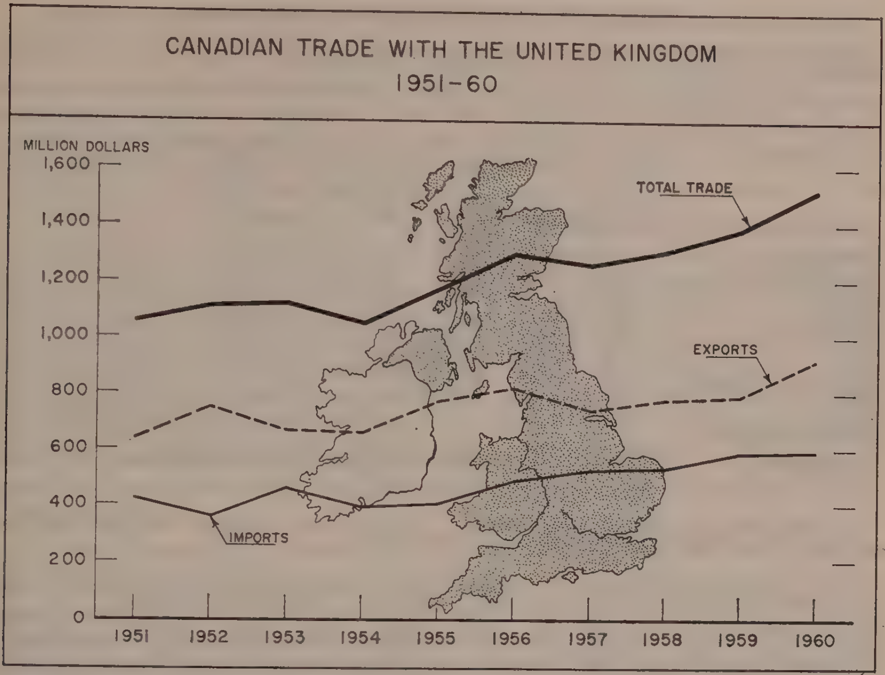
In 1960, Canada's export trade showed some changes in direction, with smaller shipments to the United States and 20 p.c. more to overseas areas. During that year, 56.3 p.c. of total exports went to the United States as contrasted with 61.9 p.c. in 1959. The United Kingdom's share was 17.1 p.c., an increase from 15.4 p.c. in 1959, and other Commonwealth countries took 6.2 p.c. in 1960 as against 5.4 p.c. in 1959. European countries absorbed 11.8 p.c., over 2 p.c. more than in 1959, reflecting the general increase in economic growth there. The share of exports forwarded to Latin America remained approximately the same and the increased proportion taken by other countries mainly represented larger purchases by Japan.

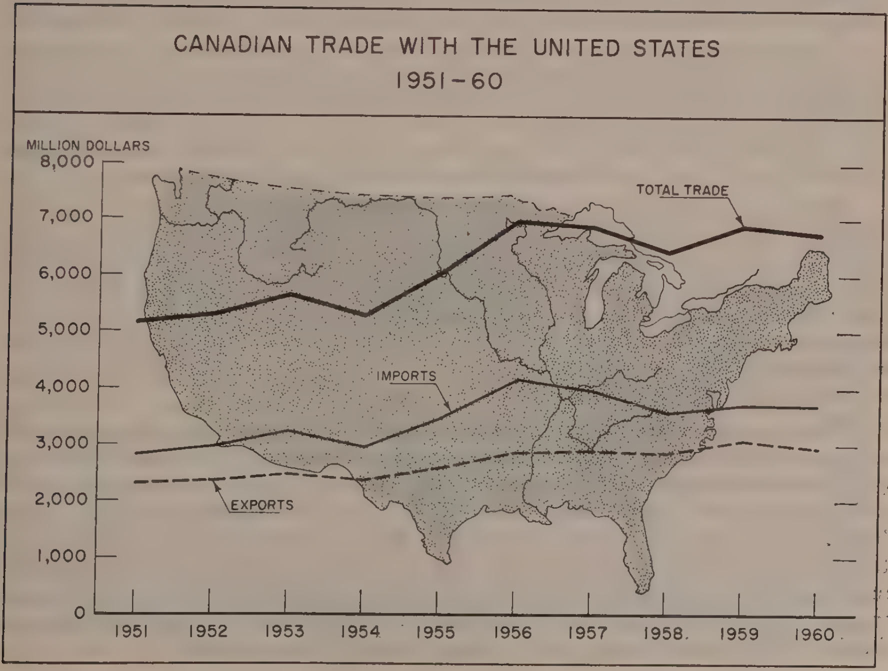


Imports showed less variation and the shares provided by the principal suppliers, the United States at 67.2 p.c. and the United Kingdom at 10.7 p.c., were practically identical in 1959 and 1960. The proportion of imports from other Commonwealth countries rose slightly to 5.1 p.c. while the share supplied by the remaining other countries was 17.0 p.c., a fractional decline from the preceding year. The percentages of shipments received from Europe and Asia advanced slightly but were more than offset by declines in arrivals from Latin America and the Middle East.

Canadian trade with the United Kingdom and the United States during the past ten years and the movement of exports to and imports from these two principal trading partners are illustrated in the charts on p. 961.

The importance of foreign trade to the Canadian economy is reflected in the fact that exports of goods and services have been close to 20 p.c. of the gross national expenditure in recent years while imports of goods and services have been slightly more. Among the major trading nations of the world, Canada in 1960 ranked fifth in the total value of commodities traded, preceded only by the United States, the United Kingdom, the Federal Republic of Germany and France. In recent years, including 1959, Canada had ranked fourth but increased economic activity in France during 1960 put the value of that country's total trade above that of Canada. Total world trade, as shown in Table 2, increased by approximately 11.1 p.c. in 1960 over 1959. On a per capita basis, Canada's position has declined considerably, dropping from first place in the early 1950's to second place in 1957 and 1958, to third in 1959 and to eighth in 1960. The effects of the current improvement in European trading conditions are noticeable, for the leading countries on a per capita basis were Belgium and Luxembourg, Switzerland, the Netherlands, Sweden and Denmark, followed by Trinidad and Tobago, New Zealand and Canada.


CANADIAN TRADE WITH THE UNITED KINGDOM
1951-60
MILLION DOLLARS
1,600
1,400
1,200
1,000
800
600
400
200
0
TOTAL TRADE
EXPORTS
IMPORTS
1951
1952
1953
1954
1955
1956
1957
1958
1959
1960


CANADIAN TRADE WITH THE UNITED STATES
1951-60
MILLION DOLLARS
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
TOTAL TRADE
IMPORTS
EXPORTS
1951
1952
1953
1954
1955
1956
1957
1958
1959
1960

2.—World Trade, by Leading Countries, 1959 and 1960

Sources: International Monetary Fund, *International Financial Statistics*, July 1961; and United Nations Statistical Office, *Population and Vital Statistics Reports*, Series A, Vol. XIII, No. 2.

Country	1959			1960			Population	Trade per Capita	
	Exports f.o.b.	Imports c.i.f.	Total Trade	Exports f.o.b.	Imports c.i.f.	Total Trade		1959	1960
	U.S.$ '000,000	U.S.$ '000,000	U.S.$ '000,000	U.S.$ '000,000	U.S.$ '000,000	U.S.$ '000,000	'000	U.S.$	U.S.$
United States	17,576	16,548	34,124	20,526	15,952	36,478	182,489	190[1]	200[1]
United Kingdom	9,692	11,175	20,867	10,352	12,765	23,117	52,539	400	440
Germany, Federal Republic	9,804	8,480	18,284	11,418	10,107	21,525	55,922	332	385
France	5,615	5,088	10,703	6,864	6,281	13,145	45,683	238	288
Canada	**5,652**	**6,244**	**11,896**	**5,826**	**6,124**	**11,950**	**18,041**	**682**	**662**
Netherlands	3,607	3,940	7,547	4,028	4,531	8,559	11,555	665	741
Japan	3,457	3,600	7,057	4,055	4,491	8,546	93,820	76	91
Italy	2,895	3,341	6,236	3,650	4,721	8,371	49,368	127	170
Belgium and Luxembourg	3,295	3,442	6,737	3,775	3,957	7,732	9,454	715	818
Sweden	2,206	2,405	4,611	2,567	2,876	5,443	7,480	619	728
Australia	2,001	2,123	4,124	1,965	2,713	4,678	10,332	410	453
Malaya and Singapore	1,932	1,845	3,777	2,091	2,035	4,126	8,449	456	488
World Totals[2]	**101,660**	**106,890**	**208,550**	**113,200**	**118,600**	**231,800**	**1,953,000**	**107**	**119**

[1] Includes military aid extended to other countries.

[2] Excludes China, Union of Soviet Socialist Republics and the communist countries of Eastern Europe (except Yugoslavia).

International Background.—By the latter part of 1960, although world trade remained at a high level, the rate of growth began to moderate. Commodity prices, especially of coffee, cocoa, sugar, base metals, wool and rubber, showed a downward trend during the last half of the year. The primary producing countries were thus faced with a considerable decline in the purchasing power of their exports in terms of necessary imports. Among the industrial countries there was also some slackening in the rate of expansion.

In the United States, although exports rose considerably, there was increasing evidence by the fourth quarter of a gentle but broad decline in the economy, and in the United Kingdom there was a slow-down in production and exports. Western Europe continued to enlarge its manufacturing capacity and external trade, but at a somewhat less rapid pace. Japan's industrial output and imports rose throughout 1960 and exports increased over 1959 totals, but the rate of advance was reduced toward the close of the year.

To counteract this levelling off in international activity, several of the principal trading countries, Canada included, have undertaken intensive steps to promote export trade. In recent years, ample production facilities throughout the main industrial nations, many stemming from new or re-designed plants, coupled with a growing labour force, have ushered in a global era of sharper competition. This has replaced the situation, obtaining since the end of the Second World War and until about the middle 1950's, when international demand for many commodities exceeded supply, actual shortages existed in numerous lines, and world productive capacity was insufficient.

There were further developments among the regional blocs of trading nations that have appeared in recent years. The first of these groups—the European Economic Community (EEC) or Common Market set up by the Treaty of Rome—came into existence on Jan. 1, 1958 and is composed of France, West Germany, Italy, the Netherlands, Belgium and Luxembourg. By January 1961 these countries had made the third 10-p.c. reduction in their tariffs against each other, except for some rates on agricultural products, and had abolished most import licences and quotas between members. The economic advantages of a community of 170,000,000 people are becoming increasingly apparent and industrial production within the six countries climbed approximately 11 p.c. in 1960.

After attempts failed to get the majority of countries in Europe into a general European free trade area, the European Free Trade Association (EFTA), composed of the United Kingdom, Norway, Sweden, Denmark, Austria, Switzerland and Portugal, was brought into being by the Stockholm Convention of Nov. 20, 1959. This group of nations represents a market of 90,000,000 persons. The participating countries have already reduced duties on most industrial goods produced and sold among themselves by 20 p.c. as from July 1, 1960, and hope within ten years to establish a free trade area between members. Each nation will fix its own tariff against the world.

The implications on world trade of these two powerful groups are manifold and efforts on a broad front are being made to prevent Western Europe from splitting into rival and competitive blocs. An important step was the formation of the Organization for Economic Co-operation and Development (OECD), set up in Paris on Dec. 14, 1960. By including Canada and the United States, this new organization of 20 countries will take the place of the Organization for European Economic Co-operation (OEEC) founded in 1948, which was composed of 18 European nations and whose task of bringing postwar economic recovery to Western Europe has been largely accomplished. The main objectives of the OECD will be to encourage economic and financial growth within member countries, to contribute to the sound expansion of the under-developed countries and to work for an increase in world trade on a multilateral and non-discriminatory basis. Membership by Canada and the United States underlines the interdependence of the economies of the Atlantic countries.

In Latin America, two trade groups are in the formative stage. The Latin American Free Trade Area (LAFTA), set up by a convention initialed in Montevideo on Feb. 18, 1960 and subsequently ratified by the respective governments, seeks to bring Argentina, Brazil, Chile, Mexico, Paraguay, Peru and Uruguay into a free trade association. It is possible that other South American nations may join the group. The intention of the Association is to remove all tariffs and trade barriers between members within 12 years and thus to increase their output and prosperity. A treaty signed in Managua on Dec. 13, 1960 between El Salvador, Guatemala, Honduras and Nicaragua created a Central American Common Market. Arrangements were made for future participation by Costa Rica. The treaty provides for the abolition of duties on goods produced within the integrated area and the eventual establishment of a common tariff for the remainder of the world.

During 1960, progress was continued toward the liberalization of international trade and payments arrangements. The free world trading nations associated in the General Agreement on Tariffs and Trade (GATT) took further steps toward the reduction of duties and the removal of import restrictions and the general convertibility of currencies, in keeping with improvements in their financial and economic conditions. However, import controls for agricultural products are still maintained by many countries. The principles of a common tariff applicable to all nations whose goods enter the European Common Market have been largely agreed to by EEC members and negotiations are being conducted toward its implementation with those countries adhering to the GATT.

From the Canadian point of view, the main question posed by the formation of these regional trade groups is how this new situation will affect Canada's agricultural and other exports to the various member countries. In particular, the common external EEC tariffs on a number of important Canadian exports, such as lumber, wood pulp, synthetic rubber and aluminum, are in process of being settled through negotiation among the Common Market members. Also, with regard to the EFTA, there is the problem of possible difficulties created for those Canadian exports that might be affected by the eventual disappearance of the preferential treatment which they have been traditionally enjoying in the United Kingdom market. Though not yet as important as trade with Europe, there is also a growing market for Canadian exports in Latin America and in 1960 over half of these were destined to countries of the LAFTA group. In view of the vital importance to Canada's economy of free and multilateral trade, these latest world developments in the field of common markets are of considerable interest to this country.

Canadian Trade in 1960.—*Exports.*—The principal components of Canadian export trade are drawn from the forests, farms and mines of the nation. Shipments of wood, wood products and paper, agricultural and vegetable products and non-ferrous metals and products together account for over two-thirds of total exports. In descending order of importance, newsprint, wheat, lumber, wood pulp, aluminum, uranium, nickel, copper, iron ore, asbestos and synthetic rubber and plastics were the leading commodities in 1960. Exports of each were valued in excess of $100,000,000 and the majority showed gains during the year. Newsprint valued at over $750,000,000 continued to occupy first place and shipments were 4.9 p.c. above those for 1959. Lumber sales rose 7.0 p.c. and wood pulp exports advanced by 4.4 p.c. For cereals, although world trade in wheat increased, Canadian wheat exports were 7.1 p.c. less in 1960 than in the preceding year and barley and wheat flour shipments declined considerably.

Among non-ferrous metals, aluminum, nickel, copper and zinc, exports were all above 1959 totals but shipments of uranium ores and concentrates, mainly because of decreased deliveries to the United States, were 15.5 p.c. less in 1960. In other principal commodities, crude petroleum, rolling-mill products and non-farm machinery advanced substantially and asbestos and fertilizer exports also rose appreciably. Shipments of farm implements and machinery, however, declined considerably, fish products moderately and iron ore slightly.

Domestic exports to the United States in 1960 declined to $2,934,500,000, a drop of 4.8 p.c. from the 1959 total. The downward trend was attributable mainly to decreased shipments of uranium ores and concentrates, farm implements, nickel, aluminum, iron ore, cattle, lumber and rolling-mill products. Newsprint accounted for more than a fifth of Canadian exports to the United States, shipments rising by 2.6 p.c. in 1960. Lumber was the second commodity, although sales were 4.7 p.c. below 1959. Wood pulp came third, shipments advancing fractionally in 1960. In order of value of exports, uranium fell 15.2 p.c., iron ore 13.5 p.c. and fish products fractionally. Crude petroleum shipments were up more than a quarter, nickel was down by more than a fifth, copper advanced but tended downward at the year-end and exports of farm implements were over a quarter less than in the preceding year.

Exports to the United Kingdom were buoyant, rising 16.5 p.c. to $915,300,000 in 1960. Wheat, which accounted for nearly 15 p.c. of the total, remained the leading export to the United Kingdom, although shipments declined 8.6 p.c. from 1959. Aluminum and products were second, advancing 16.0 p.c., followed by copper and products which rose 42.5 p.c. and nickel, up 47.0 p.c. Newsprint shipments increased by a sixth while lumber exports were nearly double those of 1959. Other grains declined a sixth, wood pulp and iron ore each moved up nearly a quarter while uranium ore and concentrates dropped off a fifth.

Canadian exports to Commonwealth countries, other than the United Kingdom, increased 19.6 p.c. in 1960, being valued at $326,958,000. This was due mainly to advanced shipments to Australia, and included were larger amounts of newsprint, lumber, wood pulp, aluminum, iron and steel products. Shipments to Hong Kong doubled, wheat, textiles, chemicals and non-ferrous metals all increasing. Exports to New Zealand rose substantially, there being higher shipments to that country of newsprint, chemicals, and iron and steel products. Sales to the Union of South Africa rose slightly while those to the West Indies Federation fell fractionally. Shipments to India and Pakistan declined by nearly a third, mainly because of lower wheat deliveries. Exports to India of aluminum and copper products advanced while exports of non-farm machinery and rolling-mill products decreased.

Exports to Western Europe increased by nearly a third in 1960, being valued at $600,115,000. The Federal Republic of Germany took the largest share, followed by France, Norway, Belgium and Luxembourg, Italy and the Netherlands. Shipments to all of these coutries were greater in 1960, particularly to Germany, France and Italy. Wheat sales to France and Italy increased substantially but declined to Germany. The rising rate of production in the six countries of the European Economic Community resulted in increased demand for semi-fabricated iron and steel and for non-ferrous metals, particularly aluminum, copper and nickel.

Exports to South America were valued at $114,200,000, a rise of 4.6 p.c., and those to Central America advanced 11.4 p.c. to $84,100,000 in 1960. Shipments to Argentina, Brazil and Mexico increased considerably while those to Venezuela were nearly a quarter less. Newsprint sales rose to Argentina and Brazil as did rolling-mill products to Argentina and Mexico. Fish and newsprint shipments were less to Cuba and plastics were lower to Mexico and Venezuela. Exports of aluminum to Mexico more than doubled and asbestos products increased.

Shipments to non-Commonwealth countries in Asia advanced more than a quarter in 1960 and were valued at $215,300,000. The bulk of these was to Japan which purchased $178,000,000 worth and thus ranked as Canada's third principal export market. Exports to Japan of wheat, iron ore, aluminum, copper, asbestos and machinery increased considerably while sales of barley, wood pulp and plastics declined.

Imports.—For many years, iron and its products have accounted for over one-third of total imports and non-farm machinery and parts have headed the list of principal commodities. Automobile parts, crude and partly refined petroleum, electrical apparatus, passenger cars, engines and boilers, rolling-mill products (iron and steel), tractors and parts, aircraft and parts, and farm implements and machinery have followed, the order of importance shifting slightly from year to year. In 1960, each of these products except farm implements and machinery exceeded $100,000,000 in value.

More of the leading import commodities showed increases in 1960 than declines when compared with the preceding year. However, non-farm machinery at $580,000,000, by far the most valuable import, was fractionally below 1959. As compared with that year, imports of automobile parts increased by 2.8 p.c., and crude petroleum by 2.1 p.c. Aircraft and parts were up more than 50 p.c. and imports of automobiles, engines and boilers and rolling-mill products showed moderate advance. Imports of cotton fabrics and raw cotton were considerably higher, apparel moderately higher and paper products slightly higher. On the other hand, imports of electrical apparatus dropped 3.3 p.c. for the year and there were considerable decreases in tractors and parts and in farm implements and machinery. Imports of fuel oils and coal declined but those of synthetic plastics increased.

The United States supplied the greatest portion of foreign goods brought into Canada, imports from that country totalling $3,693,200,000 in 1960, a fraction less than in the previous year. Non-farm machinery was the chief import from the United States although deliveries were slightly less than in 1959. Imports of automobile parts, the second commodity, rose 2.1 p.c. in 1960. In descending order of value, farm implements and machinery decreased 17.5 p.c., electrical apparatus dropped 1.3 p.c., fruits were the same in both years and engines and boilers fell 1.2 p.c. Imports of aircraft and parts increased sharply and were nearly three-quarters higher in 1960 than in the preceding year. Among other commodities, rolling-mill products advanced somewhat, as did plastics, books and automobiles. Cotton products and petroleum products each dropped by one-fifth while wood and rubber products each declined over one-eighth. Vegetables increased and raw cotton imports more than doubled. Imports of coal and synthetic fibres were somewhat less than in 1959.

Imports from the United Kingdom in 1960 were valued at $588,900,000, being fractionally higher than in 1959. Automobiles took first place, accounting for over 18 p.c. of imports from that country and were more than one-fifth higher in value in 1960 than in the preceding year. Wool products followed, increasing by one-third. Electrical apparatus declined one-sixth and non-farm machinery dropped slightly. Imports of engines and boilers increased by one-quarter but rolling-mill products and farm implements and machinery each dropped approximately one-tenth. Clay and products and cotton and products were lower. Imports of aircraft and parts increased sharply in the final quarter but, because of decreases in the earlier quarters, were over 14 p.c. less in 1960 than in the preceding year. Precious metals increased by two-thirds.

Imports from the remainder of the Commonwealth at $279,100,000 were 16.7 p.c. higher than the 1959 total. This was attributable mainly to the inclusion in the Commonwealth total of petroleum imports from Kuwait and other British Middle East countries, which prior to 1960 had been credited to Saudi Arabia. There was also a considerable increase in bauxite from Jamaica and total imports from the West Indies Federation, the leader in the Commonwealth group, rose by 11.2 p.c. Australia sent more wool but less sugar, raisins and meats, and total imports fell by 13.6 p.c. Imports from India, Malaya and Singapore, British Guiana and Ceylon remained at about the same high levels as in 1959. There was a considerable rise in imports from the Union of South Africa and moderate increases in goods brought in from Hong Kong, New Zealand and Fiji. Cocoa from Nigeria and Ghana, coffee from British East Africa, and tea from India and Ceylon showed gains. Larger wool and meat shipments from New Zealand, more sugar from Fiji, and increased deliveries of oranges, peanuts, sugar and tobacco from the Union of South Africa contributed to the advance made by the Commonwealth group.

Imports from Western Europe advanced by 1.7 p.c., being valued at $372,200,000 for 1960. The Federal Republic of Germany was the chief source, supplying approximately one-third, followed by France which sent about 14 p.c. Italy and Belgium each provided about 11 p.c. and the Netherlands approximately 8 p.c. Shipments from West Germany increased by 2.5 p.c., from Italy by 13.8 p.c. and from the Netherlands by 7.9 p.c. There was a decline of 12.0 p.c. in imports from France and of 7.6 p.c. in those from Belgium and Luxembourg. Imports of machinery from Germany and Sweden advanced as did imports of passenger automobiles from Germany and electrical apparatus from the Netherlands. Rolling-mill products from Belgium and Germany, automobiles from France, and electrical apparatus from Germany and Switzerland declined considerably.

Imports from South America declined by 4.3 p.c. in 1960 and from Central America and the Antilles by 30.6 p.c. Petroleum from Venezuela, as usual the principal item, fell by 6.7 p.c. Imports of petroleum products from that country were higher but those from the Netherlands Antilles decreased by 30.9 p.c. Less coffee came from Brazil and Colombia, and imports of cotton from Mexico and El Salvador declined sharply. More bananas arrived from Ecuador but deliveries from Panama and Costa Rica declined. Imports of Cuban sugar decreased by one-third. Iron ore shipments from Brazil were considerably higher.

Imports from non-Commonwealth countries in Asia showed a gain of 9.3 p.c., mainly attributable to a 7.5-p.c. increase in imports from Japan and some advance in arrivals from Communist China, the Philippines and Taiwan. There was a wide range of commodities brought in from Japan, among which rolling-mill products and electrical apparatus advanced but machinery dropped. In the Middle East, crude petroleum imports from Iran for 1960 were almost three times as great as in the preceding year.

Leading Trade Partners.—Following the United States and the United Kingdom, Japan and the Federal Republic of Germany, each at over $150,000,000, were the third and fourth most important markets for Canadian goods in 1960 and in the preceding year. Next in line, and each purchasing Canadian goods in excess of $50,000,000 in 1960, were Australia, France, Norway, Belgium and Luxembourg, Italy, the Netherlands and the Union of South Africa. Considerable quantities of Canadian exports also went to the West Indies Federation, Mexico, India and Venezuela, in that order according to value.

During 1960, following the United States and the United Kingdom, the chief sources of imports were Venezuela, the Federal Republic of Germany, Japan, the West Indies Federation and France, each supplying goods in excess of $50,000,000. Sizable amounts of merchandise were obtained from Italy, Belgium and Luxembourg, Saudi Arabia, Australia, the Netherlands Antilles, Iran, the Netherlands and India.

PART II.—FOREIGN TRADE STATISTICS*

Section 1.—Explanatory Notes on Canadian Trade Statistics

Sources.—Canadian foreign trade statistics are compiled from information recorded on customs documents received in the Dominion Bureau of Statistics from the various customs ports in Canada (except for exports of electric energy, which are based on data received from the National Energy Board). Record is kept of value and, whenever possible, of quantity. In considering these trade figures, it should be noted that the statistics do not necessarily reflect the financial transactions relating to the movement of goods since the method and time of payment are affected by many factors.

Coverage.—"Domestic exports" or "exports of Canadian produce" include exports of goods wholly produced in Canada together with exports of previously imported goods that have been changed in form by further processing in Canada. "Re-exports" or "exports of foreign produce" include previously imported goods that are exported from Canada in the same form as when imported.

"Imports" or "imports entered for consumption" include all goods that enter Canada and are cleared through customs for domestic sale or use, i.e., imports on which all duties are paid and which have passed from customs control into the possession of the importer. Goods re-exported without being cleared for domestic consumption are not included. It should be noted that the fact that imports have been "entered for consumption" does not necessarily imply that the goods will all be consumed in Canada but only that consumption can take place without further customs formalities.

The most important exclusions from export totals in the past were: gold, goods shipped to Canadian Armed Forces or diplomats stationed abroad, goods financed under the Defence Appropriation Act and shipped to other NATO countries, temporary exports for exhibition or competition, and fuel and stores sold to foreign vessels and aircraft in Canada. These exclusions continue but, effective Jan. 1, 1960, additional exclusions have been made as follows: settlers' effects, private donations and gifts, and identifiable tourist purchases. These revisions have been made to all tables in this Chapter.

The most important exclusions from import totals in the past were: gold, goods for use of the United States Armed Forces stationed at treaty bases in Canada, Canadian-owned military equipment returned to Canada, ships imported for use in foreign trade and ships of British construction and registry imported for use in the coasting trade, temporary imports for exhibition or competition, and fuel and stores purchased by Canadian vessels and aircraft abroad. These exclusions continue but, effective Jan. 1, 1960, further exclusions from the total have been made as follows: settlers' effects, private donations and gifts, tourist purchases exempt from duty, and goods imported for foreign armed forces or diplomats stationed in Canada. These revisions have been made to all tables in this Chapter.

Effective with statistics for January 1960, certain changes have been made in the types of transaction included in published totals of Canadian exports and imports. Previously, most of the transactions included in these totals were commercial trade with the addition of various non-commercial and special transactions, and some types of the non-commercial and special transactions did not receive uniform treatment in both records. Especially in the past ten years, there were sizable differences between the balance of trade calculated from unadjusted export and import totals and that calculated from data adjusted to exclude non-commercial and special transactions.

From Jan. 1, 1960, a new category has been established in both export and import statistics entitled "Special Transactions—Non-Trade" in relation to the new exclusions from trade totals referred to above. This category includes certain commodity movements which either have no international financial implications or, for various reasons, are better considered separately from merchandise trade in economic analysis. The value of transactions of these types will be excluded entirely from published totals of Canadian merchandise trade, but statistics for the classes of this category will be published in the regular monthly export and import reports. As a result of these changes, the export and import totals will have substantially the same coverage and will provide a much truer picture of the merchandise trade component of the balance of payments. As the deductions from import totals have considerably exceeded those from export totals, the effect of these changes has been to reduce significantly the size of the import balances published in earlier issues of the Year Book.

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* Based on statistics taken from reports published by the External Trade Section, International Trade Division, Dominion Bureau of Statistics.

Valuation.—Exports are normally valued f.o.b. point of consignment from Canada, i.e., at the actual amount received or to be received by the exporter in Canadian dollars, exclusive of inland freight, ocean freight, insurance, handling and other charges.

Imports are normally valued f.o.b. point of consignment to Canada, i.e., excluding inland freight, ocean freight, insurance, handling and export or import duties. The statistical value of imports is usually the value as determined for customs duty purposes, which is basically the fair market value at which equivalent goods would be sold for home use in the country from which the imports were received; the customs value of imports usually corresponds to the invoice value of the goods. From Jan. 1, 1959, the statistical value of imports on which dumping duty has been collected is considered to be the value of the goods as declared by the importer, i.e., the value for duty less the amount of the dumping duty. This change was introduced to conform with the principle that trade statistics should show, whenever possible, the actual amount paid for imports; previously the statistical value of such imports was considered to be the value for duty.

Country Classification.—Trade is credited to countries on the basis of consignment. For exports from Canada, the country of consignment is that country to which goods are, at the time of export, intended to pass without interruption of transit except in the course of transfer from one means of conveyance to another. For imports into Canada, the country of consignment is the country from which the goods came without interruption of transit except in the course of transfer from one means of conveyance to another. This is not necessarily the country of actual origin, since goods produced in one country may be imported by a firm in another country and re-sold to Canada; in such cases the second country is the country of consignment to which the goods are credited. There is one exception to this rule; an attempt is made to classify by country of origin goods produced in South America, Central America, Bermuda and the Antilles and consigned to Canada from the United States. The effect of this procedure, in force since 1946, is to reduce slightly the imports credited to the United States and to increase those credited to South and Central American countries.

A new classification of countries has been introduced for export and import statistics as of Jan. 1, 1960. This classification is basically geographical; the world is divided into nine geographic regions and within each region the countries are listed alphabetically in two groups—the first for Commonwealth countries and the second for other countries. The regions and the order in which they are listed are: Western Europe; Eastern Europe; Middle East; Other Africa; Other Asia; Oceania; South America; Central America and Antilles; and North America. Henceforth, all basic statistics on trade by country will be presented according to this classification.

The adoption of the new classification facilitated extensive changes in the country detail. Two criteria guided the drafting of such changes and will be used to guide future revisions: (1) total trade between Canada and each country specified should exceed $100,000 per year; and (2) available documentation must be adequate to compile accurate statistics of trade between Canada and each country specified.

Discrepancies in Trade Statistics between Canada and Other Countries.—Canada's statistics of exports are rarely in exact agreement with the import statistics of its customers and parallel differences occur with Canadian imports. Major factors contributing to these discrepancies include:—

(1) Differences in the system of valuation used by Canada and those of other countries, especially with respect to the treatment of transportation charges.

(2) Differences in the statistical treatment of special categories of trade, such as armaments and military supplies, government-financed gift or mutual aid shipments, postal and express shipments, or warehouse trade.

(3) Differing definitions of territorial areas.

(4) Differing systems of geographical classification of trade, notably the consignment system used by Canada and the actual origin or ultimate destination system in use by some other countries.

(5) Differences in the time at which trade is recorded in the statistics of partner countries caused by the time required for goods to move from one country to another.

Section 2.—Total Foreign Trade

In considering the figures in Sections 2 to 6, reference should be made to the explanatory notes on trade in Section 1. It must be emphasized that gold imports and exports are excluded from all tables.

1.—Value of Total Foreign Trade of Canada (excluding Gold), 1946-60

NOTE.—Figures have been revised to cover the adjustment for "Special Transactions—Non-Trade", see p. 967.

Year	Exports			Imports			Balance of Trade: Excess of Exports (+) Imports (−)
	Domestic	Re-exports	Total	Dutiable	Free	Total	
	$'000	$'000	$'000	$'000	$'000	$'000	$'000
1946	2,272,005	26,844	2,298,848	1,078,934	762,333	1,841,267	+ 457,582
1947	2,752,799	36,829	2,789,628	1,562,690	979,969	2,542,659	+ 246,969
1948	3,052,090	34,441	3,086,531	1,382,203	1,236,074	2,618,276	+ 468,254
1949	2,974,969	29,428	3,004,397	1,444,124	1,269,902	2,714,025	+ 290,372
1950	3,104,016	38,620	3,142,636	1,621,534	1,503,697	3,125,231	+ 17,406
1951	3,897,082	48,847	3,945,929	2,174,304	1,830,635	4,004,939	− 59,011
1952	4,282,361	54,814	4,337,175	2,162,882	1,753,535	3,916,418	+ 420,757
1953	4,097,111	55,158	4,152,269	2,417,960	1,829,848	4,247,808	− 95,539
1954	3,860,217	65,604	3,925,821	2,311,568	1,655,833	3,967,401	− 41,580
1955	4,258,328	69,448	4,327,776	2,638,037	1,929,718	4,567,754	− 239,978
1956	4,760,442	73,335	4,833,777	3,292,516	2,254,435	5,546,951	− 713,175
1957	4,788,880	95,261	4,884,141	3,223,197	2,250,149	5,473,346	− 589,205
1958	4,791,436	102,907	4,894,343	2,952,714	2,097,779	5,050,492	− 156,150
1959	5,021,672	118,628	5,140,300	3,143,065	2,365,856	5,508,921	− 368,621
1960	5,264,052	131,217	5,395,269	3,048,507	2,443,841	5,492,348	97,079

Treatment of Gold in Trade Statistics.—The general use of gold as a money metal gives it peculiar attributes that distinguish it from other commodities in trade. In particular, international movements of gold are determined largely by monetary factors rather than by ordinary trade or commercial considerations. Gold is generally acceptable; it does not have to surmount tariff barriers and is normally assured a market at a fixed minimum price. Also, gold may be bought or sold internationally without any physical movements of the metal, such transactions being recognized by simply setting aside or 'ear-marking' the metal in the vaults of some central bank.

For these reasons movements of gold in a primary or semi-fabricated state are excluded from the totals of Canada's commodity trade. However, since gold is produced in Canada primarily as an export commodity, a series showing new gold production available for export is published as a supplement to the trade statistics. Because this series is calculated on a production basis, a division of the figures into transactions with individual countries is not possible.

2.—New Gold Production Available for Export, by Month, 1953-60

NOTE.—Since Mar. 21, 1956, mines not receiving aid under the Emergency Gold Mining Assistance Act have been allowed to sell their gold to private residents and non-residents, either for export or for safe-keeping in Canada. Such sales, commencing in April 1956, are included in the figures for new gold production available for export.

(Millions of dollars)

Month	1953	1954	1955	1956	1957	1958	1959	1960
January	16.0	11.5	11.5	12.5	13.6	14.7	11.7	14.5
February	16.1	10.2	14.7	12.7	12.4	17.7	16.1	15.0
March	15.6	12.8	12.2	12.4	11.7	11.1	9.8	14.3
April	11.7	13.8	10.9	12.3	10.7	10.7	14.1	9.4
May	12.0	13.7	15.0	13.4	15.1	12.9	12.9	12.4
June	13.7	15.6	13.3	12.8	5.0	14.7	13.8	13.3
July	9.3	13.6	11.9	10.8	12.7	13.6	11.4	11.7
August	10.7	13.3	13.1	14.0	3.4	11.4	11.1	14.4
September	10.4	11.9	12.2	12.1	9.9	12.6	10.3	15.7
October	9.9	12.3	11.7	12.1	16.0	13.9	9.4	12.3
November	9.1	12.3	15.0	12.0	16.1	11.4	12.6	11.7
December	9.8	13.7	13.4	10.1	17.1	12.4	15.1	16.8
Totals	**144.3**	**154.7**	**154.9**	**147.2**	**143.7**	**157.1**	**148.3**	**161.5**

Section 3.—Trade by Geographic Area

The tables in this Section provide information about Canada's total foreign trade by geographic region and by country.

3.—Trade of Canada with Commonwealth and Other Countries, 1946-60

Item and Year	Canadian Trade with—							
	United Kingdom		United States		Other Commonwealth Countries		Other Countries	
	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total
	$'000		$'000		$'000		$'000	
Domestic Exports								
1946	594,138	26.2	884,066	38.9	293,473	12.9	500,328	22.0
1947	746,718	27.1	1,030,101	37.4	387,909	14.1	588,071	21.4
1948	683,249	22.4	1,498,552	49.1	328,634	10.8	541,655	17.7
1949	702,074	23.6	1,504,768	50.6	300,189	10.1	467,938	15.7
1950	467,896	15.1	2,020,703	65.1	184,362	5.9	431,055	13.9
1951	630,124	16.2	2,296,235	58.9	239,982	6.2	730,741	18.7
1952	744,461	17.4	2,302,673	53.8	260,788	6.1	974,339	22.7
1953	663,785	16.2	2,413,318	58.9	231,412	5.7	788,596	19.2
1954	651,033	16.9	2,308,670	59.8	193,768	5.0	706,746	18.3
1955	767,642	18.0	2,547,636	59.8	235,867	5.6	707,183	16.6
1956	811,113	17.0	2,803,085	58.9	242,011	5.1	904,233	19.0
1957	720,898	15.1	2,846,646	59.4	231,637	4.8	989,699	20.7
1958	771,576	16.1	2,808,067	58.6	281,435	5.9	930,358	19.4
1959	785,802	15.7	3,083,151	61.4	273,305	5.4	879,414	17.5
1960	915,290	17.4	2,932,171	55.7	326,958	6.2	1,089,633	20.7

3.—Trade of Canada with Commonwealth and Other Countries, 1946-60—concluded

Item and Year	Canadian Trade with— United Kingdom Value	United Kingdom P.C. of Total	United States Value	United States P.C. of Total	Other Commonwealth Countries Value	Other Commonwealth Countries P.C. of Total	Other Countries Value	Other Countries P.C. of Total
	$'000		$'000		$'000		$'000	
Imports								
1946	137,423	7.5	1,387,386	75.3	135,550	7.4	180,908	9.8
1947	184,207	7.2	1,951,606	76.8	164,507	6.5	242,339	9.5
1948	293,535	11.2	1,798,507	68.7	203,858	7.8	322,376	12.3
1949	302,420	11.1	1,915,227	70.6	186,240	6.9	310,138	11.4
1950	400,811	12.8	2,089,531	66.9	240,988	7.7	393,901	12.6
1951	415,194	10.4	2,752,087	68.7	305,522	7.6	532,136	13.3
1952	351,541	9.0	2,887,628	73.7	183,911	4.7	493,338	12.6
1953	445,441	10.5	3,115,301	73.3	169,666	4.0	517,400	12.2
1954	382,229	9.6	2,871,279	72.4	180,759	4.6	533,134	13.4
1955	393,117	8.6	3,331,143	72.9	208,940	4.6	634,554	13.9
1956	476,371	8.6	4,031,394	72.7	220,437	4.0	818,749	14.7
1957	507,319	9.3	3,887,391	71.0	237,932	4.3	840,704	15.4
1958	518,505	10.3	3,460,147	68.5	208,702	4.1	863,138	17.1
1959	588,573	10.7	3,709,065	67.3	239,240	4.3	972,043	17.7
1960	588,930	10.7	3,693,189	67.2	279,069	5.1	931,160	17.0

4.—Trade of Canada, by Leading Countries, 1958-60

Rank in— 1958	1959	1960	Item and Country	1958	1959	1960
				$'000	$'000	$'000
			Domestic Exports			
1	1	1	United States (incl. Alaska and Hawaii)	2,808,067	3,083,151	2,934,529
2	2	2	United Kingdom	771,576	785,802	915,290
4	3	3	Japan	104,853	139,724	178,008
3	4	4	Germany, Federal Republic	201,134	129,345	165,597
9	7	5	Australia	52,562	53,929	98,862
11	12	6	France	44,688	43,157	72,907
8	5	7	Norway	55,849	62,308	70,072
7	6	8	Belgium and Luxembourg	69,531	56,127	69,131
14	13	9	Italy	29,718	31,717	68,393
6	8	10	Netherlands	74,721	53,849	62,554
10	10	11	Union of South Africa	49,960	51,243	52,655
13	13	12	West Indies Federation	35,543	39,714	39,522
14	15	13	Mexico	31,429	27,633	38,023
5	9	14	India	78,994	53,654	36,814
12	11	15	Venezuela	43,480	45,833	35,345
16	16	16	Switzerland	29,243	25,728	26,404
21	24	17	New Zealand	15,008	13,306	23,858
32	27	18	Hong Kong	6,028	11,192	22,515
26	21	19	Sweden	10,866	14,879	20,906
17	23	20	Brazil	21,088	14,148	19,755
31	31	21	Argentina	6,428	7,002	19,364
[1]	19	22	Poland	560	15,631	16,665
23	17	23	Colombia	13,813	17,668	16,590
22	22	24	Philippines	14,077	14,863	14,809
19	20	25	Cuba	17,549	15,222	13,038
20	18	26	Pakistan	15,311	17,317	11,942
24	28	27	Puerto Rico	12,526	10,522	11,172
30	33	28	Spain	6,675	6,168	10,243
25	26	29	Peru	11,441	11,632	8,891
28	[1]	30	China, Communist	7,809	1,720	8,737
			Totals, 30 Leading Countries	**4,640,530**	**4,854,185**	**5,082,591**
			Grand Totals, Domestic Exports	**4,791,436**	**5,021,672**	**5,264,052**

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[1] Lower than 50th.

4.—Trade of Canada, by Leading Countries, 1958-60—concluded

Rank in— 1958	1959	1960	Item and Country	1958	1959	1960
				$'000	$'000	$'000
			Imports			
1	1	1	United States (incl. Alaska and Hawaii)	3,460,147	3,709,065	3,693,189
2	2	2	United Kingdom	518,505	588,573	588,930
3	3	3	Venezuela	209,538	204,582	195,189
4	4	4	Germany, Federal Republic	102,644	123,905	126,988
5	5	5	Japan	70,092	102,669	110,382
7	8	6	West Indies Federation	42,794	50,441	56,112
8	7	7	France	40,007	56,940	50,121
12	12	8	Italy	32,150	37,656	42,843
10	10	9	Belgium and Luxembourg	35,759	44,786	41,401
6	6	10	Saudi Arabia	68.021	70,725	39,774
11	11	11	Australia	32,755	41,080	35,508
9	9	12	Netherlands Antilles	39,453	47,120	32,521
[1]	25	13	Iran	915	11,948	31,469
16	15	14	Netherlands	26,905	29,154	31,456
14	14	15	India	27,655	29,221	29,352
19	16	16	Malaya and Singapore	19,863	28,644	28,120
15	17	17	Brazil	27,419	28,479	24,883
17	18	18	Switzerland	26,491	24,514	24,343
[2]	[2]	19	Kuwait	[2]	[2]	22,303
13	13	20	Mexico	31,888	34,201	21,007
22	19	21	Sweden	13,939	18,077	20,399
18	20	22	British Guiana	20,627	18,033	18,924
23	22	23	Ceylon	12,863	15,133	15,556
25	23	24	Hong Kong	8,689	12,969	15,534
21	21	25	Colombia	16,574	15,827	12,784
26	31	26	Union of South Africa	7,914	6,564	11,482
36	29	27	Ecuador	4,962	7,623	11,018
24	28	28	New Zealand	11,540	8,594	10,099
28	26	29	Denmark	7,401	9,227	9,962
[1]	[1]	30	British Middle East, *n.e.s.*	62	400	8,493
			Totals, 30 Leading Countries	**4,917,574**	**5,376,149**	**5,360,138**
			Grand Totals, Imports	**5,050,492**	**5,508,921**	**5,492,348**

[1] Lower than 50th.

[2] Included with Saudi Arabia prior to 1960.

5.—Value of Domestic Exports, by Geographic Region and Country, 1953-60

Region and Country	1953	1954	1955	1956	1957	1958	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Western Europe—								
United Kingdom	662,785	651,033	767,642	811,113	720,898	771,576	785,802	915,290
Gibraltar	486	252	282	239	272	214	182	200
Malta and Gozo	3,298	3,035	3,926	4,056	2,743	1,506	2,142	2,299
Austria	5,103	2,821	5,943	4,920	6,441	7,457	8,261	7,745
Belgium and Luxembourg	69,442	54,937	53,314	57,789	60,194	69,531	56,127	69,131
Denmark	6,252	2,832	3,109	3,467	3,487	4,859	5,449	4,978
Finland	1,357	457	1,707	1,931	909	2,312	2,739	4,355
France	31,908	33,440	42,134	52,710	57,030	44,688	43,157	72,907
Germany, Federal Republic	83,607	86,668	90,526	133,847	151,508	201,134	129,345	165,597
Greece	1,154	2,057	4,153	2,402	4,022	4,576	3,798	5,546
Iceland	2,052	669	504	284	268	310	279	243
Ireland	13,332	8,794	12,757	10,106	8,379	8,690	8,156	7,706
Italy	33,068	23,650	27,423	37,559	62,685	29,718	31,717	68,393
Netherlands	41,239	39,517	47,500	54,371	69,553	74,721	53,849	62,554

5.—Value of Domestic Exports, by Geographic Region and Country, 1953-60—continued

Region and Country	1953	1954	1955	1956	1957	1958	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Western Europe—concluded								
Norway	37,244	43,764	46,931	57,609	55,491	55,849	62,308	70,072
Portugal	4,211	2,752	2,813	1,895	2,788	2,553	3,251	3,336
Spain	14,161	2,721	4,139	5,013	5,875	6,675	6,168	10,243
Sweden	4,529	3,476	7,587	7,793	11,964	10,866	14,879	20,906
Switzerland	29,685	26,678	25,493	33,294	24,894	29,243	25,728	26,404
Totals, Commonwealth Countries	666,569	654,319	771,849	815,409	723,913	773,296	788,125	917,789
Totals, Other Countries	378,345	335,232	376,033	464,990	525,488	553,182	455,211	600,115
Totals, Western Europe	**1,044,914**	**989,551**	**1,147,882**	**1,280,399**	**1,249,401**	**1,326,478**	**1,243,336**	**1,517,905**
Eastern Europe—								
Albania	—	—	—	—	[1]	[1]	[1]	[1]
Bulgaria	—	—	—	102	116	70	200	491
Czechoslovakia	118	287	1,044	24,540	1,401	1,342	4,937	6,767
Germany, Eastern	—	—	2,261	1,458	25	[1]	[1]	994
Hungary	48	30	164	1,907	289	384	1,115	931
Poland	162	548	3,989	17,903	16,632	560	15,631	16,665
Romania	93	74	396	123	429	1,171	1,157	1,326
Union of Soviet Socialist Republics	[1]	4,854	2,658	24,528	10,646	18,863	12,638	8,233
Yugoslavia	1,913	7,105	348	206	189	198	2,577	3,249
Totals, Eastern Europe	**2,334**	**12,897**	**10,860**	**70,766**	**29,727**	**22,587**	**38,255**	**38,658**
Middle East—								
Bahrain	[2]	[2]	[2]	[2]	[2]	[2]	[2]	112
Cyprus	[3]	[3]	[3]	[3]	[3]	[3]	[3]	609
Kuwait	[2]	[2]	[2]	[2]	[2]	[2]	[2]	1,091
British Middle East, *n.e.s.*	34	22	16	8	1	1	7	115
Ethiopia	47	91	55	101	117	77	72	220
Iran	753	755	634	782	1,700	1,648	2,242	2,499
Iraq	457	425	1,167	654	1,069	969	4,311	2,425
Israel	8,706	10,034	4,457	2,648	4,889	4,501	4,557	6,184
Jordan	37	23	11	35	56	73	72	131
Lebanon	5,069	862	1,178	1,162	924	2,073	3,182	3,443
Libya	1,277	832	73	95	180	156	382	333
Saudi Arabia	2,644	1,588	1,236	1,940	1,656	2,017	2,877	2,905
Somalia	[1]	1	[1]	6	6	—	193	2
Sudan	17	7	4	65	212	182	367	335
Turkey	1,442	7,082	630	822	450	1,400	693	2,014
United Arab Republic—								
Egyptian Region	11,675	1,130	1,261	2,499	1,197	1,077	1,601	2,010
Syrian Region	575	1,165	1,043	716	798	765	1,067	674
Totals, Commonwealth Countries	34	22	16	8	1	1	7	1,927
Totals, Other Countries	32,699	23,995	11,750	11,525	13,254	14,938	21,617	23,176
Totals, Middle East	**32,733**	**24,017**	**11,766**	**11,533**	**13,254**	**14,939**	**21,624**	**25,103**

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[1] Less than $500. [2] Included with Saudi Arabia prior to 1960. [3] Included with Malta and Gozo prior to 1960.

5.—Value of Domestic Exports, by Geographic Region and Country, 1953-60—continued

Region and Country	1953	1954	1955	1956	1957	1958	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Other Africa—								
Ghana	1,739	2,303	1,451	1,479	1,244	1,272	3,784	3,879
Kenya	273	320	523	383	743	472	806	936
Mauritius and Dependencies	—	—	—	108	145	107	68	77
Nigeria	925	1,434	852	723	1,492	308	938	2,305
Rhodesia and Nyasaland	2,199	3,913	4,282	4,640	4,925	3,894	2,851	4,088
Sierra Leone	235	356	598	614	490	501	725	641
Tanganyika	[1]	[1]	[1]	[1]	[1]	[1]	[1]	143
Uganda	[1]	[1]	[1]	[1]	[1]	[1]	[1]	86
Union of South Africa	50,666	39,789	55,920	64,565	48,322	49,960	51,243	52,655
British Africa, *n.e.s.*	29	71	109	99	36	15	57	200
Algeria	[2]	[2]	[2]	[2]	[2]	[2]	[2]	4,662
Angola	[3]	[3]	[3]	[3]	[3]	[3]	[3]	67
Belgian Congo	3,337	3,617	3,526	2,774	2,614	2,926	2,689	1,310
French Equatorial Africa	[2]	[2]	[2]	[2]	[2]	[2]	[2]	34
French West Africa	[2]	[2]	[2]	[2]	[2]	[2]	[2]	135
French Africa, *n.e.s.*	1,301	1,216	1,221	1,060	844	1,008	2,765	10
Guinea	[2]	[2]	[2]	[2]	[2]	[2]	[2]	9
Liberia	3,144	4,066	2,454	1,781	1,551	652	217	644
Morocco	3,806	2,822	1,786	2,027	725	1,152	416	627
Mozambique	1,970	2,604	2,041	2,185	2,128	1,326	2,012	3,145
Portuguese Africa, *n.e.s.*	—	317	264	167	210	320	305	279
Spanish Africa	83	19	2	15	15	2	2	28
Tunisia	[2]	[2]	[2]	[2]	[2]	[2]	[2]	170
Totals, Commonwealth Countries	56,068	48,185	63,734	72,610	57,397	56,529	60,473	65,010
Totals, Other Countries	13,642	14,661	11,294	10,008	8,086	7,386	8,406	11,121
Totals, Other Africa	**69,710**	**62,846**	**75,028**	**82,619**	**65,482**	**63,915**	**68,878**	**76,130**
Other Asia—								
Ceylon	3,293	3,135	2,652	3,325	3,205	5,459	4,931	2,479
Hong Kong	8,984	8,228	7,237	7,005	7,563	6,028	11,192	22,515
India	37,142	17,486	24,573	25,614	28,902	78,994	53,654	36,814
Malaya and Singapore	2,835	2,975	3,405	3,889	3,288	3,223	3,258	4,660
Pakistan	32,059	8,761	6,109	10,376	11,308	15,311	17,317	11,942
British East Indies, *n.e.s.*	27	17	52	127	185	112	95	360
Afghanistan	149	55	19	14	87	24	67	159
Burma	443	211	479	285	239	944	817	806
Cambodia and Laos	[4]	[4]	[4]	[4]	[4]	[4]	[4]	148
China, Communist	—	70	1,016	2,427	1,390	7,809	1,720	8,737
Indonesia	1,983	1,305	931	1,201	1,590	1,665	1,760	2,110
Japan	118,441	96,401	90,817	127,804	139,082	104,853	139,724	178,008
Korea	14,208	2,005	6,977	2,594	6,970	3,682	6,000	3,916
Philippines	13,857	15,852	18,115	18,036	17,516	14,077	14,863	14,809
Portuguese India	190	43	174	454	461	341	358	385
Portuguese Asia, *n.e.s.*								93
Taiwan (Republic of China)	1,474	3,180	1,221	747	1,641	1,161	1,692	2,886
Thailand	1,508	1,766	2,336	1,933	2,041	1,288	1,937	2,710
Viet Nam	344	178	327	534	996	249	385	540
Totals, Commonwealth Countries	84,340	40,601	44,028	50,335	54,452	109,127	90,447	78,770
Totals, Other Countries	152,595	121,066	122,413	156,030	172,011	136,095	169,324	215,309
Totals, Other Asia	**236,935**	**161,667**	**166,441**	**206,366**	**226,463**	**245,222**	**259,771**	**294,079**
Oceania—								
Australia	39,547	45,625	58,291	47,582	48,662	52,562	53,929	98,862
Fiji	422	650	1,055	1,121	578	814	727	808
New Zealand	7,404	14,700	22,248	17,896	16,842	15,008	13,306	23,858
British Oceania, *n.e.s.*	64	103	84	118	113	98	65	324
French and Netherlands Oceania	487	386	475	479	386	271	171	313
United States Oceania	253	269	333	212	208	138	167	640
Totals, Commonwealth Countries	47,437	61,078	81,678	66,717	66,195	68,483	68,027	123,852
Totals, Other Countries	740	654	808	691	594	409	338	953
Totals, Oceania	**48,176**	**61,733**	**82,486**	**67,408**	**66,789**	**68,892**	**68,365**	**124,805**

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[1] Included with Kenya prior to 1960. [2] Included with French Africa, *n.e.s.*, prior to 1960. [3] Included with Portuguese Africa, *n.e.s.*, prior to 1960. [4] Included with Viet Nam prior to 1960.

5.—Value of Domestic Exports, by Geographic Region and Country, 1953-60—concluded

Region and Country	1953	1954	1955	1956	1957	1958	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
South America—								
British Guiana	4,741	4,056	2,908	4,298	4,969	4,014	4,392	7,428
Falkland Islands	41	4	274	11	3	53	216	169
Argentina	7,585	6,681	6,794	6,130	14,158	6,428	7,002	19,364
Bolivia	5,496	1,268	1,065	1,480	934	414	324	323
Brazil	37,476	45,043	11,377	12,945	25,686	21,088	14,148	19,755
Chile	3,918	3,126	3,804	4,394	4,342	4,566	6,226	6,575
Colombia	20,111	20,948	22,641	17,552	14,587	13,813	17,668	16,590
Ecuador	4,216	5,503	4,950	4,336	2,782	3,185	3,864	3,913
French Guiana	6	4	2	[1]	5	2	2	2
Paraguay	335	166	90	237	171	183	114	120
Peru	15,066	5,055	5,956	11,265	10,031	11,441	11,632	8,891
Surinam	711	910	971	1,025	829	853	696	883
Uruguay	2,900	2,775	2,341	2,752	3,777	938	1,656	2,423
Venezuela	36,432	30,884	30,672	34,203	39,661	43,480	45,833	35,345
Totals, Commonwealth Countries	4,781	4,061	3,182	4,309	4,971	4,067	4,608	7,597
Totals, Other Countries	134,253	122,362	90,663	96,318	116,963	106,392	109,166	114,184
Totals, South America	**139,034**	**126,423**	**93,845**	**100,627**	**121,935**	**110,459**	**113,773**	**121,780**
Central America and Antilles—								
Bahamas	2,218	2,224	2,086	2,218	2,487	2,541	3,083	3,357
Bermuda	2,994	2,925	2,933	2,801	2,907	3,195	4,334	4,016
British Honduras	376	299	303	243	276	229	289	409
West Indies Federation	29,380	31,086	33,699	38,473	39,935	35,543	39,714	39,522
Barbados	*3,700*	*4,333*	*4,217*	*4,684*	*4,628*	*4,159*	*4,103*	*3,775*
Jamaica	*12,382*	*11,477*	*12,767*	*17,063*	*19,247*	*15,588*	*18,538*	*18,056*
Leeward and Windward Islands	*3,855*	*3,915*	*4,130*	*4,270*	*4,297*	*4,248*	*4,437*	*4,720*
Trinidad and Tobago	*9,442*	*11,360*	*12,585*	*12,456*	*11,763*	*11,548*	*12,636*	*12,971*
Costa Rica	2,197	2,827	3,572	2,731	2,360	2,879	2,633	2,983
Cuba	16,101	17,417	13,883	15,284	16,846	17,549	15,222	13,038
Dominican Republic	3,968	4,242	4,153	4,965	4,991	5,335	5,137	5,062
El Salvador	1,896	1,524	1,793	2,293	2,412	2,146	2,567	2,390
French West Indies	24	23	21	16	37	26	19	43
Guatemala	2,229	2,015	2,507	2,997	3,190	3,645	2,627	2,106
Haiti	2,638	3,234	2,406	2,888	2,191	2,079	1,319	1,529
Honduras	552	455	580	856	1,055	1,201	946	1,416
Mexico	28,930	27,307	37,087	39,303	42,477	31,429	27,633	38,023
Netherlands Antilles	1,291	1,769	1,434	1,332	1,312	1,583	1,193	1,131
Nicaragua	1,352	1,650	1,759	1,396	1,534	1,886	1,515	1,319
Panama	4,378	4,055	2,815	7,742	30,657	5,370	4,023	3,703
Puerto Rico	7,745	7,723	9,700	10,396	12,589	12,526	10,522	11,172
United States Virgin Islands	177	119	190	130	126	132	185	214
Totals, Commonwealth Countries	34,968	36,533	39,021	43,735	45,605	41,507	47,421	47,304
Totals, Other Countries	73,478	74,359	81,902	92,329	121,779	87,786	75,540	84,127
Totals, Central America and Antilles	**108,445**	**110,893**	**120,923**	**136,064**	**167,384**	**129,294**	**122,961**	**131,431**
North America—								
Greenland	194	299	86	176	76	138	154	427
St. Pierre and Miquelon	1,318	1,221	1,373	1,399	1,722	1,444	1,403	1,563
United States	2,413,318	2,308,670	2,547,636	2,803,085	2,846,646	2,808,067	3,083,151	2,932,171
Totals, North America	**2,414,830**	**2,310,191**	**2,549,096**	**2,804,660**	**2,848,445**	**2,809,650**	**3,084,708**	**2,934,162**
Grand Totals, Commonwealth Countries	**894,197**	**844,800**	**1,003,508**	**1,053,124**	**952,535**	**1,053,011**	**1,059,107**	**1,242,248**
Grand Totals, Other Countries	**3,202,914**	**3,015,417**	**3,254,820**	**3,707,318**	**3,836,345**	**3,738,425**	**3,962,565**	**4,021,804**
Grand Totals, All Countries	**4,097,111**	**3,860,217**	**4,258,328**	**4,760,442**	**4,788,880**	**4,791,436**	**5,021,672**	**5,264,052**

[1] Less than $500.

6.—Value of Imports, by Geographic Region and Country, 1953-60

Region and Country	1953	1954	1955	1956	1957	1958	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Western Europe—								
United Kingdom	445,441	382,229	393,117	476,371	507,319	518,505	588,573	588,930
Gibraltar	—	1	[1]	—	—	[1]	[1]	2
Malta and Gozo	44	45	43	39	64	62	174	22
Austria	2,708	2,721	2,547	3,724	4,239	4,640	5,707	6,605
Belgium and Luxembourg	28,823	24,794	28,854	52,379	43,681	35,759	44,786	41,401
Denmark	1,976	3,258	4,075	5,858	7,939	7,401	9,227	9,962
Finland	501	579	343	500	402	475	875	1,053
France	21,407	21,331	24,364	31,719	34,987	40,007	56,940	50,121
Germany, Federal Republic	30,989	40,413	52,214	84,430	92,527	102,644	123,905	126,988
Greece	202	210	265	242	399	316	310	538
Iceland	79	54	5	2	40	7	40	15
Ireland	558	1,125	324	371	1,122	1,313	2,001	2,098
Italy	14,073	14,781	18,307	24,644	32,536	32,150	37,656	42,843
Netherlands	17,788	18,528	19,073	21,524	21,690	26,905	29,154	31,456
Norway	2,172	1,879	2,290	3,698	2,984	3,106	4,063	4,248
Portugal	2,117	1,983	2,130	2,404	2,750	3,045	3,116	3,208
Spain	4,586	5,538	6,184	5,651	5,541	6,681	5,627	6,947
Sweden	9,079	8,973	11,996	17,135	15,339	13,939	18,077	20,399
Switzerland	20,098	18,808	18,965	21,925	24,053	26,491	24,514	24,343
Totals, Commonwealth Countries	445,486	382,274	393,160	476,410	507,383	518,567	588,747	588,954
Totals, Other Countries	157,157	164,974	191,938	276,207	290,228	304,879	365,997	372,226
Totals, Western Europe	**602,642**	**547,248**	**585,098**	**752,617**	**797,611**	**823,446**	**954,744**	**961,179**
Eastern Europe—								
Albania	—	—	—	—	—	—	—	[1]
Bulgaria	[1]	[1]	3	4	[1]	4	6	6
Czechoslovakia	2,570	1,787	2,861	5,649	5,013	4,908	6,440	6,654
Germany, Eastern	959	721	572	779	707	948	901	877
Hungary	176	202	116	189	168	701	237	338
Poland	212	372	579	2,158	1,050	1,131	1,643	1,871
Romania	[1]	1	—	2	[1]	4	35	84
Union of Soviet Socialist Republics	809	676	619	1,001	2,789	1,676	2,278	3,210
Yugoslavia	88	274	509	901	564	813	551	804
Totals, Eastern Europe	**4,816**	**4,034**	**5,259**	**10,683**	**10,292**	**10,185**	**12,090**	**13,844**
Middle East—								
Bahrain	[2]	[2]	[2]	[2]	[2]	[2]	[2]	—
Cyprus	[3]	[3]	[3]	[3]	[3]	[3]	[3]	180
Kuwait	[2]	[2]	[2]	[2]	[2]	[2]	[2]	22,303
British Middle East, *n.e.s.*	10	73	47	73	51	62	400	8,493
Ethiopia	43	97	88	120	61	18	44	43
Iran	1,017	1,385	2,061	1,056	535	915	11,948	31,469
Iraq	1,365	227	1,298	919	429	1,556	1,107	722
Israel	1,174	1,000	1,132	1,463	1,548	1,725	2,349	2,372
Jordan	—	—	2	1	4	1	1	1
Lebanon	19,577	17,413	17,915	19,590	6	12	4	33
Libya	—	—	—	[1]	[1]	[1]	—	[1]
Saudi Arabia	2,193	2,215	6,983	24,709	34,315	68,021	70,725	39,774
Somalia	—	—	—	—	—	—	[1]	—
Sudan	60	57	97	97	45	80	438	83
Turkey	782	693	740	686	823	491	886	855
United Arab Republic—								
Egyptian Region	4,143	426	266	145	229	179	200	846
Syrian Region	55	22	1,058	1,350	238	200	183	127
Totals, Commonwealth Countries	10	73	47	73	51	62	400	30,975
Totals, Other Countries	30,409	23,536	31,639	50,137	38,232	73,198	87,887	76,326
Totals, Middle East	**30,419**	**23,609**	**31,686**	**50,210**	**38,284**	**73,261**	**88,286**	**107,301**

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[1] Less than $500. [2] Included with Saudi Arabia prior to 1960. [3] Included with Malta and Gozo prior to 1960.

6.—Value of Imports, by Geographic Region and Country, 1953-60—continued

Region and Country	1953	1954	1955	1956	1957	1958	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Other Africa—								
Ghana	3,157	1,982	3,773	4,062	5,989	2,122	4,103	3,127
Kenya	9,386	15,839	13,146	7,270	4,970	5,057	4,261	2,561
Mauritius and Dependencies	—	—	—	7,758	10,278	5,918	7,584	2,100
Nigeria	1,583	863	858	985	2,352	2,372	3,084	4,358
Rhodesia and Nyasaland	3,846	1,141	469	715	1,080	1,373	966	981
Sierra Leone	2	7	8	18	9	2	1	5
Tanganyika	[1]	[1]	[1]	[1]	[1]	[1]	[1]	1,834
Uganda	[1]	[1]	[1]	[1]	[1]	[1]	[1]	1,277
Union of South Africa	4,473	5,789	6,152	8,321	6,777	7,914	6,564	11,482
British Africa, *n.e.s.*	—	—	—	—	[2]	[2]	[2]	5
Algeria	[3]	[3]	[3]	[3]	[3]	[3]	[3]	161
Angola	[4]	[4]	[4]	[4]	[4]	[4]	[4]	209
Belgian Congo	2,247	1,489	2,673	2,744	3,337	1,125	2,258	1,781
French Equatorial Africa	[3]	[3]	[3]	[3]	[3]	[3]	[3]	185
French West Africa	[3]	[3]	[3]	[3]	[3]	[3]	[3]	270
French Africa, *n.e.s.*	2,629	3,482	3,280	2,095	2,225	1,749	2,183	33
Guinea	[3]	[3]	[3]	[3]	[3]	[3]	[3]	2,794
Liberia	372	135	214	440	7	147	39	8
Morocco	517	178	182	151	138	130	209	222
Mozambique	73	191	128	370	39	24	18	1
Portuguese Africa, *n.e.s.*	—	173	44	94	33	11	—	—
Spanish Africa	31	26	41	24	20	7	8	2
Tunisia	[3]	[3]	[3]	[3]	[3]	[3]	[3]	62
Totals, Commonwealth Countries	22,448	25,621	24,405	29,130	31,456	24,759	26,563	27,729
Totals, Other Countries	5,869	5,674	6,562	5,920	5,799	3,195	4,715	5,728
Total, Other Africa	**28,318**	**31,295**	**30,967**	**35,050**	**37,254**	**27,954**	**31,278**	**33,456**
Other Asia—								
Ceylon	14,449	12,526	15,573	16,540	14,910	12,863	15,133	15,556
Hong Kong	4,316	4,039	5,821	5,642	7,138	8,689	12,969	15,534
India	26,565	28,016	35,105	30,852	29,185	27,655	29,221	29,352
Malaya and Singapore	21,862	19,554	28,790	28,544	27,313	19,863	28,644	28,120
Pakistan	542	556	810	1,297	489	460	1,061	985
British East Indies, *n.e.s.*	349	172	71	122	120	129	390	261
Afghanistan	40	9	4	—	—	—	—	—
Burma	2	79	5	[2]	9	84	24	85
Cambodia and Laos	[5]	[5]	[5]	[5]	[5]	[5]	[5]	17
China, Communist	1,097	1,599	3,114	5,713	5,299	5,370	4,840	5,638
Indonesia	587	606	998	1,141	951	211	147	529
Japan	13,475	19,004	36,586	60,729	61,396	70,092	102,669	110,382
Korea	[2]	23	461	1	34	21	235	404
Philippines	2,972	3,999	2,027	2,451	3,957	2,177	1,440	1,966
Portuguese India Portuguese Asia, *n.e.s.*	14	1	—	—	—	1	[2]	—
Taiwan (Republic of China)	75	187	155	112	189	159	716	1,150
Thailand	896	777	1,100	1,062	609	643	649	842
Viet Nam	1	44	170	12	5	3	8	5
Totals, Commonwealth Countries	68,084	64,863	86,170	82,997	79,155	69,659	87,418	89,807
Totals, Other Countries	19,160	26,328	44,620	71,223	72,448	78,762	110,728	121,020
Totals, Other Asia	**87,244**	**91,191**	**130,790**	**154,220**	**151,603**	**148,422**	**198,146**	**210,827**
Oceania—								
Australia	23,284	24,512	26,161	26,207	28,572	32,755	41,080	35,508
Fiji	5,552	5,813	5,016	6,266	7,216	5,727	4,764	6,481
New Zealand	8,528	7,275	12,282	12,265	11,707	11,540	8,594	10,099
British Oceania, *n.e.s.*	—	—	—	142	—	160	157	—

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[1] Included with Kenya prior to 1960. [2] Less than $500. [3] Included with French Africa, *n.e.s.*, prior to 1960. [4] Included with Portuguese Africa, *n.e.s.*, prior to 1960. [5] Included with Viet Nam prior to 1960.

6.—Value of Imports, by Geographic Region and Country, 1953-60—continued

Region and Country	1953	1954	1955	1956	1957	1958	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Oceania—concluded								
French and Netherlands Oceania	—	—	—	—	19	[1]	1	—
United States Oceania	—	—	—	[1]	—	—	[1]	21
Totals, Commonwealth Countries	37,364	37,600	43,459	44,880	47,495	50,182	54,595	52,087
Totals, Other Countries	—	—	—	[1]	19	[1]	1	21
Totals, Oceania	**37,365**	**37,600**	**43,459**	**44,880**	**47,514**	**50,182**	**54,597**	**52,109**
South America—								
British Guiana	17,769	20,458	18,282	20,482	20,988	20,627	18,033	18,921
Falkland Islands	—	—	—	—	—	—	[1]	8
Argentina	8,483	2,716	4,380	4,525	4,679	5,357	3,380	3,611
Bolivia	1,411	267	15	87	139	132	166	443
Brazil	34,969	31,553	30,692	34,807	35,276	27,419	28,479	24,883
Chile	1,043	219	248	1,701	1,597	823	870	747
Colombia	23,170	24,797	22,214	23,037	18,179	16,574	15,827	12,784
Ecuador	2,687	3,761	5,187	4,496	4,427	4,962	7,623	11,018
French Guiana	3	—	—	—	—	[1]	—	—
Paraguay	259	520	237	142	278	347	746	760
Peru	2,880	2,250	835	2,754	2,768	2,326	3,978	3,037
Surinam	1,335	2,791	3,642	3,925	3,899	2,270	2,872	4,156
Uruguay	2,899	1,023	481	1,156	808	820	657	987
Venezuela	155,092	167,515	187,226	208,346	248,069	209,538	204,582	195,189
Totals, Commonwealth Countries	17,769	20,458	18,282	20,482	20,988	20,627	18,034	18,929
Totals, Other Countries	234,232	237,413	255,158	284,975	320,119	270,568	269,180	257,615
Totals, South America	**252,001**	**257,871**	**273,439**	**305,458**	**341,107**	**291,194**	**287,213**	**276,544**
Central America and Antilles—								
Bahamas	417	396	263	197	145	146	233	2,614
Bermuda	60	204	114	118	116	276	1,291	701
British Honduras	135	124	157	137	182	136	92	91
West Indies Federation	23,334	31,375	36,000	42,384	58,281	42,794	50,441	56,112
Barbados	*2,364*	*5,327*	*8,221*	*4,610*	*7,602*	*3,735*	*4,709*	*2,854*
Jamaica	*11,725*	*15,235*	*15,516*	*24,572*	*40,133*	*27,491*	*31,012*	*37,688*
Leeward and Windward Islands	*1,209*	*1,248*	*2,453*	*2,191*	*2,387*	*1,761*	*1,989*	*1,059*
Trinidad and Tobago	*8,036*	*9,565*	*9,811*	*11,012*	*8,159*	*9,807*	*12,731*	*14,512*
Costa Rica	9,460	7,746	5,927	3,890	8,602	7,127	4,810	4,345
Cuba	11,638	9,895	9,989	12,257	13,840	18,836	12,011	7,243
Dominican Republic	5,853	1,657	1,522	1,345	1,268	2,659	1,634	1,586
El Salvador	1,381	949	2,962	1,133	1,311	1,186	3,899	829
French West Indies	—	—	157	[1]	—	—	7	28
Guatemala	3,256	5,058	4,544	3,224	3,469	3,585	2,718	3,256
Haiti	747	1,569	1,594	1,679	1,491	1,073	1,053	982
Honduras	4,594	2,586	1,666	7,079	4,575	4,903	2,905	3,352
Mexico	15,757	13,943	28,734	41,592	20,987	31,888	34,201	21,007
Netherlands Antilles	8,139	20,549	30,699	38,103	39,259	39,453	47,120	32,521
Nicaragua	391	181	1,429	647	555	2,657	306	170
Panama	3,612	5,827	9,028	7,580	7,193	7,478	8,889	6,066
Puerto Rico	869	1,202	1,089	1,048	969	1,433	1,780	2,904
United States Virgin Islands	—	—	—	—	[1]	44	32	32
Totals, Commonwealth Countries	23,947	32,099	36,535	42,836	58,723	43,352	52,057	59,518
Totals, Other Countries	65,697	71,161	99,339	119,578	103,520	122,323	121,365	84,322
Totals, Central America and Antilles	**89,644**	**103,260**	**135,874**	**162,414**	**162,244**	**165,675**	**173,422**	**143,839**

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[1] Less than $500.

6.—Value of Imports, by Geographic Region and Country, 1953-60—concluded

Region and Country	1953	1954	1955	1956	1957	1958	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
North America—								
Greenland	2	—	[1]	[1]	[1]	8	53	[1]
St. Pierre and Miquelon	58	15	38	25	47	19	27	60
United States	3,115,301	2,871,279	3,331,143	4,031,394	3,887,391	3,460,147	3,709,065	3,693,189
Totals, North America	**3,115,360**	**2,871,294**	**3,331,181**	**4,031,419**	**3,887,437**	**3,460,174**	**3,709,145**	**3,693,248**
Grand Totals, Commonwealth Countries	**615,107**	**562,988**	**602,058**	**696,808**	**745,251**	**727,208**	**827,813**	**867,999**
Grand Totals, Other Countries	**3,632,701**	**3,404,413**	**3,965,696**	**4,850,143**	**4,728,095**	**4,323,285**	**4,681,108**	**4,624,349**
Grand Totals, All Countries	**4,247,808**	**3,967,401**	**4,567,754**	**5,546,951**	**5,473,346**	**5,050,492**	**5,508,921**	**5,492,348**

[1] Less than $500.

The proportion of imports subject to duty varies widely between countries and geographic areas. Generally, the Canadian tariff imposes duties on a greater proportion of manufactured goods than of natural products. Countries supplying chiefly manufactures to Canada tend to have duties charged on a greater proportion of their goods and also to have relatively higher average *ad valorem* rates of duty charged on their goods than is the case with countries supplying chiefly natural products. Variations in the proportion of imports dutiable as between different countries or in the average *ad valorem* rates of duty charged on imports from different countries therefore do not necessarily indicate differences in the tariff relations between Canada and these countries.

7.—Values of Dutiable and Free Imports, by Geographic Region and Leading Countries, 1958-60

Region and Country	1958			1959			1960		
	Dutiable	Free	Total	Dutiable	Free	Total	Dutiable	Free	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Western Europe	**460,139**	**363,307**	**823,446**	**516,177**	**438,567**	**954,744**	**507,468**	**453,711**	**961,179**
United Kingdom	213,146	305,359	518,505	218,763	369,810	588,573	206,346	382,584	588,930
Austria	4,388	252	4,640	5,351	356	5,707	6,253	352	6,605
Belgium and Luxembourg	26,351	9,408	35,759	34,299	10,487	44,786	30,272	11,129	41,401
Denmark	5,348	2,053	7,401	6,545	2,682	9,227	7,303	2,659	9,962
France	31,618	8,389	40,007	45,791	11,149	56,940	40,764	9,357	50,121
Germany, Federal Republic	89,143	13,501	102,644	106,642	17,263	123,905	108,818	18,170	126,988
Italy	27,679	4,471	32,150	31,143	6,513	37,656	36,882	5,961	42,843
Netherlands	19,793	7,112	26,905	23,298	5,856	29,154	24,180	7,276	31,456
Norway	2,566	540	3,106	3,359	704	4,063	2,757	1,491	4,248
Spain	2,340	4,341	6,681	2,142	3,485	5,627	2,916	4,031	6,947
Sweden	11,081	2,858	13,939	13,858	4,219	18,077	15,920	4,479	20,399
Switzerland	23,535	2,956	26,491	20,926	3,588	24,514	20,537	3,806	24,343
Eastern Europe	**8,424**	**1,761**	**10,185**	**10,302**	**1,788**	**12,090**	**11,432**	**2,412**	**13,844**
Czechoslovakia	4,794	114	4,908	6,264	176	6,440	6,453	201	6,654
Middle East	**1,283**	**71,978**	**73,261**	**2,313**	**85,973**	**88,286**	**2,065**	**105,236**	**107,301**
Kuwait	[1]	[1]	[1]	[1]	[1]	[1]	138	22,165	22,303
British Middle East, *n.e.s.*	62	—	62	400	—	400	59	—	59
Iran	75	840	915	126	11,822	11,948	149	31,320	31,469
Saudi Arabia	4	68,017	68,021	396	70,329	70,725		39,774	39,774

[1] Included with Saudi Arabia prior to 1960.

7.—Values of Dutiable and Free Imports, by Geographic Region and Leading Countries, 1958-60—concluded

Region and Country	1958			1959			1960		
	Dutiable	Free	Total	Dutiable	Free	Total	Dutiable	Free	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Other Africa	**13,878**	**14,076**	**27,954**	**16,650**	**14,628**	**31,278**	**11,723**	**21,733**	**33,456**
Union of South Africa	1,743	6,171	7,914	2,273	4,291	6,564	3,500	7,982	11,482
Nigeria	2,272	100	2,372	2,672	412	3,084	2,333	2,025	4,358
Other Asia	**82,967**	**65,455**	**148,422**	**118,811**	**79,335**	**198,146**	**130,018**	**80,809**	**210,827**
Ceylon	770	12,093	12,863	782	14,351	15,133	725	14,831	15,556
Hong Kong	8,029	660	8,689	12,284	685	12,969	14,957	577	15,534
India	6,121	21,534	27,655	6,422	22,799	29,221	7,126	22,226	29,352
Malaya and Singapore	985	18,878	19,863	943	27,701	28,644	1,393	26,727	28,120
China, Communist	1,637	3,733	5,370	1,524	3,316	4,840	1,382	4,256	5,638
Japan	64,476	5,617	70,092	95,091	7,578	102,669	102,016	8,366	110,382
Oceania	**25,389**	**24,793**	**50,182**	**30,368**	**24,229**	**54,597**	**29,790**	**22,319**	**52,109**
Australia	14,641	18,114	32,755	21,972	19,108	41,080	18,804	16,704	35,508
Fiji	5,204	523	5,727	4,763	1	4,764	6,475	6	6,481
New Zealand	5,544	5,996	11,540	3,631	4,963	8,594	4,490	5,609	10,099
South America	**62,943**	**228,251**	**291,194**	**68,720**	**218,493**	**287,213**	**69,834**	**206,710**	**276,544**
British Guiana	10,765	9,862	20,627	8,754	9,279	18,033	8,667	10,254	18,921
Brazil	19,604	7,815	27,419	20,229	8,250	28,479	17,792	7,091	24,883
Colombia	13,654	2,920	16,574	11,715	4,112	15,827	8,928	3,856	12,784
Ecuador	4,952	10	4,962	7,598	25	7,623	10,942	76	11,018
Venezuela	9,399	200,139	209,538	16,787	187,795	204,582	19,879	175,310	195,189
Central America and Antilles	**109,999**	**55,676**	**165,675**	**109,169**	**64,253**	**173,422**	**90,133**	**53,706**	**143,839**
West Indies Federation	13,572	29,222	42,794	19,009	31,432	50,441	19,466	36,647	56,113
Costa Rica	7,103	24	7,127	4,737	73	4,810	4,179	166	4,345
Cuba	17,913	923	18,836	11,171	840	12,011	5,884	1,359	7,243
Mexico	11,363	20,525	31,888	8,611	25,590	34,201	8,006	13,001	21,007
Netherlands Antilles	39,452	1	39,453	47,096	24	47,120	32,413	108	32,521
Panama	7,450	28	7,478	8,882	7	8,889	5,988	78	6,066
North America	**2,187,689**	**1,272,485**	**3,460,174**	**2,270,554**	**1,438,591**	**3,709,145**	**2,196,043**	**1,497,205**	**3,693,248**
United States	2,187,678	1,272,469	3,460,147	2,270,533	1,438,532	3,709,065	2,196,025	1,497,164	3,693,189
Totals, Commonwealth Countries	**291,480**	**435,728**	**727,208**	**312,430**	**515,383**	**827,813**	**302,159**	**565,840**	**867,999**
Totals, Other Countries	**2,661,233**	**1,662,052**	**4,323,285**	**2,830,635**	**1,850,473**	**4,681,108**	**2,746,348**	**1,878,001**	**4,624,349**
Grand Totals, Imports	**2,952,714**	**2,097,778**	**5,050,492**	**3,143,065**	**2,365,856**	**5,508,921**	**3,048,507**	**2,443,841**	**5,492,348**

8.—Average Ad Valorem Rates of Duty Collected on Dutiable and on Total Imports from All Countries, from the United Kingdom and from the United States 1950-59

Year	All Countries		United Kingdom		United States	
	Average Ad Valorem Rates of Duty on—		Average Ad Valorem Rates of Duty on—		Average Ad Valorem Rates of Duty on—	
	Dutiable Imports	Total Imports	Dutiable Imports	Total Imports	Dutiable Imports	Total Imports
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1950	17.1	8.8	16.6	6.3	16.3	9.2
1951	17.3	9.4	15.8	6.6	16.5	9.8
1952	18.2	10.1	16.5	7.3	16.8	9.9
1953	18.6	10.6	16.1	7.0	17.4	10.6
1954	18.1	10.5	16.4	7.3	17.3	10.9
1955	18.2	10.5	16.6	7.4	17.3	10.8
1956	17.5	10.4	15.8	7.3	16.7	10.7
1957	17.2	10.1	15.8	7.2	16.6	10.5
1958	17.5	10.2	20.8	8.5	16.9	10.7
1959	17.5	9.2	20.6	8.4	12.7	10.0

9.—Values and Percentages of Trade with Selected Overseas Countries via the United States, 1959

Country	Domestic Exports via the United States		Imports via the United States	
	$'000	p.c.	$'000	p.c.
Western Europe	**27,086**	**2.2**	**6,188**	**0.6**
United Kingdom	2,496	0.3	707	0.1
Austria	1,924	23.3	98	1.7
Belgium and Luxembourg	1,719	3.1	348	0.8
Denmark	846	15.5	54	0.6
France	2,309	5.4	1,033	1.8
Germany, Federal Republic	3,644	2.8	463	0.4
Greece	645	17.0	22	7.1
Ireland	228	2.8	5	0.2
Italy	2,010	6.3	2,133	5.7
Netherlands	2,030	3.8	356	1.2
Norway	1,008	1.6	10	0.2
Spain	1,879	30.5	183	3.3
Sweden	3,637	24.4	66	0.4
Switzerland	935	3.6	590	2.4
Eastern Europe	**683**	**1.8**	**58**	**0.5**
Czechoslovakia	105	2.1	3	0.1
Poland	131	0.8	—	—
Union of Soviet Socialist Republics	12	0.1	7	0.4
Middle East	**5,626**	**26.0**	**63,797**	**72.3**
Iran	1,538	68.6	3,654	30.6
Israel	710	15.6	187	8.0
Saudi Arabia	739	25.7	59,068	83.5
Other Africa	**14,646**	**21.3**	**3,087**	**9.9**
Nigeria	205	21.9	45	1.5
Union of South Africa	11,553	22.5	20	0.3
Other Asia	**15,771**	**6.1**	**18,276**	**9.2**
Ceylon	189	3.8	7	—
Hong Kong	1,923	17.2	896	6.9
India	1,296	2.4	548	1.9
Malaya and Singapore	1,346	41.3	86	0.3
Pakistan	755	4.4	51	4.8
China, Communist	16	0.9	—	—
Japan	6,017	4.3	16.006	15.6
Philippines	1,039	7.0	385	26.7
Oceania	**12,756**	**18.7**	**156**	**0.3**
Australia	9,102	16.9	36	0.1
Fiji	89	12.2	—	—
New Zealand	3,380	25.4	120	1.4
South America	**27,899**	**24.5**	**145,461**	**50.6**
British Guiana	41	0.9	921	5.1
Argentina	1,043	14.9	395	11.7
Brazil	2,397	16.9	3,757	13.2
Chile	2,854	45.8	72	8.3
Colombia	3,189	18.0	764	4.8
Ecuador	672	17.4	2,402	31.5
Peru	2,670	23.0	106	2.7
Venezuela	14,190	31.0	136,460	66.7
Central America and Antilles	**26,210**	**21.3**	**32,288**	**18.6**
West Indies Federation	—	—	4,183	8.3
Costa Rica	1,074	40.8	3,980	82.7
Cuba	2,249	14.8	2,522	21.0
Dominican Republic	1,328	25.9	668	40.9
Mexico	13,071	47.3	8,028	23.5
Netherlands Antilles	454	38.1	84	0.2
Panama	1,351	33.6	8,341	93.8
Puerto Rico	976	9.3	148	8.3
North America	**350**	—	**2,405**	**0.1**
Totals	**131,031**	**2.6**	**271,718**	**4.9**

10.—Imports Credited to Countries of Central and South America, by Country of Consignment, 1959 and 1960

Country	1959				1960			
	Consigned from Country Credited		Consigned from United States to Canada	Total Imports as Credited	Consigned from Country Credited		Consigned from United States to Canada	Total Imports as Credited
	Direct to a Canadian Port	Via a United States Port			Direct to a Canadian Port	Via a United States Port		
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Central America and Antilles	**112,315**	**32,288**	**28,819**	**173,422**	**104,940**	**25,043**	**13,856**	**143,839**
Bermuda	1,287	4	—	1,291	641	60	[1]	701
British Honduras	12	48	32	92	49	10	32	91
Bahamas	172	61	[1]	233	2,577	28	9	2,614
West Indies Federation	46,247	4,183	11	50,441	55,279	775	58	56,112
Barbados	*4,709*	—	—	*4,709*	*2,854*	—	[1]	*2,854*
Jamaica	*30,982*	*24*	*6*	*31,012*	*37,630*	*24*	*34*	*37,688*
Leeward and Windward Islands	*1,988*	—	*1*	*1,989*	*1,059*	—	—	*1,059*
Trinidad and Tobago	*8,568*	*4,159*	*4*	*12,731*	*13,737*	*751*	*24*	*14,512*
United States Virgin Islands	32	—	—	32	32	—	—	32
Costa Rica	517	3,980	313	4,810	357	3,397	591	4,345
Cuba	7,601	2,522	1,888	12,011	5,829	434	980	7,243
Dominican Republic	531	668	435	1,634	584	496	506	1,586
El Salvador	1,656	899	1,344	3,899	300	6	523	829
French West Indies	7	—	—	7	24	—	4	28
Guatemala	468	1,119	1,131	2,718	317	1,480	1,459	3,256
Haiti	186	2	865	1,053	123	89	770	982
Honduras	28	2,151	726	2,905	208	1,689	1,455	3,352
Mexico	5,149	8,028	21,024	34,201	5,046	9,460	6,501	21,007
Netherlands Antilles	46,632	84	404	47,120	31,109	1,330	82	32,521
Nicaragua	243	52	11	306	112	17	41	170
Panama	16	8,341	532	8,889	68	5,325	673	6,066
Puerto Rico	1,528	148	104	1,780	2,283	449	172	2,904
South America	**113,392**	**145,461**	**28,360**	**287,213**	**119,098**	**136,544**	**20,902**	**276,544**
British Guiana	17,057	921	55	18,033	17,960	961	—	18,921
Argentina	2,169	395	816	3,380	2,949	199	463	3,611
Bolivia	99	8	59	166	338	4	101	443
Brazil	14,846	3,757	9,876	28,479	14,813	3,476	6,594	24,883
Chile	143	72	655	870	111	111	525	747
Colombia	7,342	764	7,721	15,827	4,833	930	7,021	12,784
Ecuador	78	2,402	5,143	7,623	206	6,014	4,798	11,018
Paraguay	574	101	71	746	617	19	124	760
Peru	3,574	106	298	3,978	2,738	135	164	3,037
Surinam	2,192	448	232	2,872	2,506	1,573	77	4,156
Uruguay	453	26	178	657	931	25	31	987
Venezuela	64,865	136,460	3,257	204,582	71,086	123,098	1,005	195,189
Totals	**225,707**	**177,749**	**57,179**	**460,635**	**224,038**	**161,587**	**34,758**	**420,383**

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[1] Less than $500.

Section 4.—Trade by Commodity

The tables in this Section provide detailed information on the composition of Canada's exports and imports, with commodities shown by group and individually.

11.—Exports and Imports, by Main Group, 1959 and 1960

Group	Domestic Exports		Imports		Total Trade[1]	
	1959	1960	1959	1960	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000
All Countries	**5,021,672**	**5,264,052**	**5,508,921**	**5,492,348**	**10,649,221**	**10,887,617**
Agricultural and vegetable products	868,904	831,479	684,026	681,265	1,556,224	1,515,572
Animals and animal products	355,975	319,945	146,635	143,693	505,306	467,143
Fibres, textiles and textile products	24,997	39,219	420,152	433,549	448,014	479,067
Wood, wood products and paper	1,515,962	1,591,919	272,274	266,123	1,790,721	1,861,323
Iron and its products	563,344	605,225	2,092,093	2,046,307	2,716,552	2,715,556
Non-ferrous metals and their products	1,114,784	1,222,476	471,253	471,120	1,603,446	1,714,770
Non-metallic minerals and their products	294,235	339,569	705,606	672,170	1,007,405	1,018,043
Chemicals and allied products	201,729	237,687	326,987	338,652	533,062	582,076
Miscellaneous commodities	81,742	76,534	389,895	439,468	488,491	534,066
United Kingdom	**785,802**	**915,290**	**588,573**	**588,930**	**1,382,844**	**1,513,871**
Agricultural and vegetable products	279,418	268,516	40,385	38,750	320,544	307,451
Animals and animal products	48,542	35,088	20,395	18,743	69,277	54,269
Fibres, textiles and textile products	1,395	8,643	90,137	87,726	91,891	96,739
Wood, wood products and paper	132,512	179,514	8,312	9,219	140,899	188,791
Iron and its products	31,630	72,792	254,110	271,276	289,526	349,829
Non-ferrous metals and their products	238,483	297,329	76,249	69,699	315,206	367,598
Non-metallic minerals and their products	14,147	16,577	31,151	29,248	45,438	46,532
Chemicals and allied products	27,382	34,088	26,246	24,909	53,936	59,610
Miscellaneous commodities	12,293	2,744	41,588	39,360	56,127	43,052
United States	**3,083,151**	**2,932,171**	**3,709,065**	**3,693,189**	**6,890,968**	**6,729,604**
Agricultural and vegetable products	178,422	174,425	362,276	365,495	542,925	541,905
Animals and animal products	229,092	204,790	81,872	82,468	313,142	290,010
Fibres, textiles and textile products	10,003	10,022	193,075	220,269	205,311	235,330
Wood, wood products and paper	1,257,745	1,257,786	236,261	228,589	1,496,300	1,489,369
Iron and its products	405,520	325,425	1,666,356	1,610,213	2,122,488	1,983,272
Non-ferrous metals and their products	641,718	564,910	300,640	296,054	958,475	880,222
Non-metallic minerals and their products	224,183	248,270	296,840	268,146	528,098	521,484
Chemicals and allied products	85,910	92,220	275,125	282,723	364,283	379,450
Miscellaneous commodities	50,559	54,321	296,619	339,232	359,946	408,561

[1] Includes exports of foreign produce.

12.—Leading Domestic Exports, 1955-60

Note.—Commodities are arranged in order of value in 1960.

Commodity	1955	1956	1957	1958	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000
Newsprint paper	665,877	708,385	715,490	690,209	722,271	757,930
Wheat	338,216	513,081	380,415	446,078	441,830	410,453
Lumber and timber	386,298	328,099	282,690	293,600	323,717	346,300
Wood pulp	297,304	304,536	292,406	285,449	311,253	325,122
Aluminum, primary and semi-fabricated	210,971	234,806	229,386	222,442	230,683	268,154
Uranium ores and concentrates	26,533	45,777	127,934	276,506	311,904	263,541
Nickel, primary and semi-fabricated	215,169	222,909	248,253	212,580	226,857	258,331
Copper, primary and semi-fabricated	163,924	194,206	147,247	135,021	158,827	211,431
Iron ore	99,814	144,443	152,281	107,674	157,814	155,472

12.—Leading Domestic Exports, 1955-60—concluded

Commodity	1955	1956	1957	1958	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000
Asbestos, unmanufactured	94,804	99,898	107,058	90,745	110,431	120,113
Synthetic rubber and plastics materials, not shaped	[1]	[1]	[1]	[1]	[1]	109,139
Petroleum, crude and partly refined	36,253	103,923	140,975	73,044	74,541	94,450
Farm implements and machinery (except tractors) and parts	72,206	63,937	67,339	93,829	110,205	81,279
Whisky	60,862	68,660	66,994	70,276	78,262	79,220
Rolling-mill products (iron and steel)	20,313	25,718	33,043	31,833	53,509	73,979
Fish, fresh and frozen	55,263	55,594	63,186	70,898	66,523	68,833
Machinery (non-farm) and parts	35,789	47,130	57,177	46,881	48,403	67,074
Zinc, primary and semi-fabricated	70,558	74,011	64,921	55,385	55,287	63,534
Wheat flour	74,442	71,549	61,175	69,398	64,903	62,239
Pigs, ingots, blooms and billets (iron and steel)	33,695	20,749	42,226	24,278	32,622	53,349
Fertilizers, chemical	56,296	49,211	48,958	46,476	48,792	52,348
Barley	76,461	94,977	67,522	78,118	66,310	51,441
Engines and boilers	30,090	30,912	38,365	34,636	40,827	47,664
Flaxseed (chiefly for crushing)	31,279	43,624	64,719	45,046	41,225	47,283
Electrical apparatus, *n.o.p.*	20,700	21,407	25,186	24,944	32,571	47,282
Plywoods and veneers	30,104	29,020	22,336	22,524	32,351	32,717
Abrasives, artificial, crude	26,942	28,389	33,911	22,717	27,737	31,736
Pulpwood	48,655	49,794	48,459	34,655	29,737	31,186
Cattle, chiefly for beef	3,922	630	41,678	84,101	40,404	26,573
Lead, primary and semi-fabricated	37,194	35,026	29,396	26,099	25,470	26,043
Tobacco, unmanufactured	26,547	17,320	21,905	18,555	25,140	25,327
Automobiles, passenger	13,165	17,027	22,629	19,382	16,316	24,261
Automobile parts (except engines)	20,333	19,969	12,961	13,086	16,655	23,818
Molluscs and crustaceans	20,246	20,554	20,413	19,220	21,231	23,268
Fur skins, undressed	28,287	25,893	25,944	23,322	24,128	23,161
Fish, cured	23,939	22,835	24,513	22,700	21,791	22,153
Shingles	29,145	24,546	19,393	19,828	21,406	20,968
Aircraft and parts (except engines)	19,906	49,545	39,910	109,113	24,960	20,745
Silver, unmanufactured	19,343	18,693	16,635	18,544	19,721	19,571
Gas exported by pipeline	—	—	2,322	17,984	16,953	18,051

[1] Data for previous years not comparable with 1960.

13.—Leading Imports, 1955-60

Note.—Commodities are arranged in order of value in 1960.

Commodity	1955	1956	1957	1958	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000
Machinery (non-farm) and parts	445,875	628,521	631,599	532,916	585,235	579,791
Automobile parts (except engines)	246,505	284,788	260,075	240,526	288,596	296,571
Petroleum, crude and partly refined	229,779	271,291	305,557	278,540	277,495	283,172
Electrical apparatus, *n.o.p.*	226,715	257,292	249,328	240,112	269,402	260,473
Automobiles, passenger	83,726	125,539	106,596	141,543	199,601	220,144
Engines and boilers	109,622	132,325	138,451	134,603	135,002	141,419
Rolling-mill products (iron and steel)	129,679	234,709	221,257	147,049	131,263	133,007
Tractors and parts	115,375	159,627	127,658	117,290	172,069	131,541
Aircraft and parts (except engines)	138,091	91,304	93,691	94,820	76,745	116,494
Farm implements and machinery (except tractors) and parts	62,874	72,522	74,572	81,007	101,752	97,118
Cotton fabrics	53,400	62,130	65,049	66,168	70,058	75,150
Paperboard, paper and products	52,690	61,954	62,027	65,478	68,051	68,660
Fuel oils	77,754	81,593	76,204	64,886	77,903	66,853
Synthetic plastics, primary forms	41,072	47,092	49,747	54,891	61,024	64,554
Apparel (except hats) of all textiles	39,039	44,793	47,034	48,903	61,830	63,873
Coal, bituminous	74,453	96,516	90,692	67,067	65,115	61,821
Parcels of small value	41,639	49,371	51,982	53,583	54,514	53,764
Sugar, unrefined	52,312	55,828	75,632	58,578	56,810	50,677
Cotton, raw	61,031	58,748	49,487	45,416	43,079	49,928
Vegetables, fresh	38,852	43,694	41,614	43,431	43,285	49,436
Pipes, tubes and fittings (iron and steel)	50,290	123,088	147,727	88,371	55,305	48,405
Iron ore	31,563	38,722	36,387	28,932	27,129	48,370
Coffee, green	57,010	62,657	59,120	55,252	50,326	47,314
Principal chemicals (except acids), *n.o.p.*	57,677	61,871	54,487	41,785	42,617	43,934
Books, printed	26,035	27,950	31,468	34,765	39,458	43,391
Rubber, crude and semi-fabricated	44,110	40,610	39,101	30,779	52,063	42,587
Logs, timber and lumber	32,773	40,555	31,582	35,697	44,955	39,603
Bauxite and alumina for aluminum	21,472	24,635	38,831	30,284	31,345	39,529

13.—Leading Imports, 1955-60—concluded

Commodity	1955	1956	1957	1958	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000
Newspapers, magazines and advertising matter	34,794	34,435	35,727	37,012	38,392	39,224
Medical, optical and dental goods, *n.o.p.*	22,952	26,133	28,943	32,334	34,706	37,133
Citrus fruits, fresh	29,903	32,596	32,864	36,058	35,316	36,528
Wool fabrics	31,948	40,191	40,938	35,848	35,668	35,327
Tools	26,739	32,779	36,227	34,738	36,517	34,279
Cooking and heating apparatus, and parts	36,324	41,717	38,265	38,009	39,426	33,101
Drugs and medicines	25,108	26,560	28,729	29,619	32,824	32,947
Soybeans	19,460	24,377	23,727	23,442	28,058	32,204
Refrigerators and freezers	43,935	44,622	35,113	34,795	37,917	28,896
Synthetic fabrics	22,415	23,570	25,336	26,895	27,927	27,455
Fruits, canned and preserved	17,085	17,710	20,683	22,907	24,603	26,183
Fruit juices and syrups	15,245	19,126	19,672	25,514	28,178	26,016

Detailed Exports and Imports.—Detailed statistics of all commodities of any importance exported from Canada to all countries, to the United Kingdom and to the United States during the years 1959 and 1960 are given in Table **14**; corresponding statistics for imports into Canada appear in Table **15.**

14.—Principal Domestic Exports from Canada to All Countries, the United Kingdom and the United States, 1959 and 1960

Item	All Countries		United Kingdom		United States	
	1959	1960	1959	1960	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000
I. Agricultural and Vegetable Products (except chemicals, fibres and wood)						
A. MAINLY FOOD						
Fruits—						
Apples, fresh	6,488	7,998	2,619	3,203	2,934	3,422
Berries, fresh	2,429	3,126	—	—	2,429	3,125
Fresh fruits, *n.o.p.*	343	985	16	30	324	943
Canned or preserved fruits	1,481	904	588	218	508	440
Fruit juices, fruit syrups, and dried fruits	425	393	2	33	136	78
Vegetables—						
Potatoes (except seed potatoes)	1,385	1,891	—	—	302	150
Fresh vegetables, *n.o.p.*	3,624	4,191	—	—	3,399	4,037
Canned vegetables, including soups of all kinds	2,800	6,069	1,115	4,469	106	226
Pickles, sauces, catsups, and dried vegetables	222	459	62	286	49	42
Grains and Farinaceous Products—						
Wheat	441,830	410,453	148,215	135,427	12,863	13,755
Grain, other (including rice)	86,192	68,691	43,311	35,673	22,715	17,372
Flour of wheat	64,903	62,239	23,279	22,661	2,161	1,809
Bran, meal and other milled products, *n.o.p.*	3,337	4,704	500	1,620	1,007	1,023
Bread, biscuits, cereals and other bakery products and prepared foods	3,850	3,905	67	57	2,975	3,200
Malt	10,923	10,908	—	—	5,376	6,207
Sugar and Its Products—						
Maple syrup	1,894	3,075	16	30	1,876	3,042
Maple sugar	2,974	2,534	—	—	2,915	2,475
Sugar and products, *n.o.p.*	800	1,405	26	33	466	952
Coffee, and imitations of	37	47	[1]	—	1	5
Tea	964	1,070	—	—	963	1,068
Vegetable food products, other	1,522	2,167	26	191	715	1,038
TOTALS, A. MAINLY FOOD	638,425	597,216	219,844	203,930	64,221	64,412

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[1] Less than $500.

14.—Principal Domestic Exports from Canada to All Countries, the United Kingdom and the United States, 1959 and 1960—continued

Item	All Countries		United Kingdom		United States	
	1959	1960	1959	1960	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000
I. Agricultural and Vegetable Products (except chemicals, fibres and wood)—concluded						
B. OTHER THAN FOOD						
Ale, beer and porter	4,259	4,369	—	—	4,065	4,189
Whisky	78,262	79,220	463	480	72,179	73,917
Oil cake and oil cake meal	15,285	14,562	14,833	14,379	308	95
Oils, vegetable, not edible	3,129	2,928	2,921	2,753	101	119
Rubber, and manufactures of	11,582	8,483	183	442	6,798	2,850
Flaxseed	41,226	47,283	18,109	20,746	1	1
Seed potatoes, Government certified	4,122	3,508	—	—	1,720	1,409
Seeds, *n.o.p.*	23,977	25,560	1,974	1,758	8,140	7,974
Tobacco, unmanufactured	25,140	25,327	19,972	21,797	277	441
Tobacco, manufactured	454	258	59	42	113	97
Peat moss and other mosses	8,976	8,826	—	—	8,975	8,825
Fodders, *n.o.p.*	8,651	7,553	605	1,588	7,117	5,123
Hay	1,764	1,958	—	—	1,704	1,908
Vegetable products, other, not food	3,652	4,426	455	602	2,701	3,065
TOTALS, B. OTHER THAN FOOD	230,479	234,262	59,574	64,586	114,201	110,013
Totals, Agricultural and Vegetable Products	**868,904**	**831,479**	**279,418**	**268,516**	**178,422**	**174,425**
II. Animals and Animal Products (except chemicals and fibres)						
Animals, Living—						
Cattle, swine, sheep and poultry, pure bred, for improvement of stock	7,763	7,475	11	115	7,077	6,091
Cattle, *n.o.p.*	44,375	30,693	—	—	44,196	30,553
Horses	1,632	1,051	3	1	1,623	1,046
Other animals, living	1,160	835	240	93	773	477
Fish and Fishery Products, *n.o.p.*—						
Fish, fresh and frozen	66,523	68,833	62	1,833	65,660	65,665
Fish, salted, dried, pickled and smoked	21,791	22,153	1	1	5,386	5,429
Fish, canned or preserved, *n.o.p.*	25,982	15,145	17,335	6,250	613	591
Molluscs and crustaceans	21,231	23,268	333	628	20,361	21,893
Other fishery products, *n.o.p.*	8,689	5,235	2,575	895	5,460	3,866
Fur skins, undressed	24,128	23,161	4,536	5,041	18,458	16,893
Fur skins, dressed, and manufactures of fur	2,020	1,555	106	149	1,448	772
Hair and bristles	469	394	29	29	388	290
Hides and skins, raw (except fur skins)	15,169	16,567	1,669	1,494	6,408	4,385
Leather, unmanufactured	10,999	8,932	1,541	1,879	6,117	4,420
Leather, manufactures of	2,557	2,666	136	532	1,782	1,548
Meats—						
Fresh, chilled and frozen	26,684	22,759	[1]	20	24,182	20,404
Bacon and hams, shoulders and sides, cured, *n.o.p.*	4,555	4,470	47	—	3,790	3,604
Meats, other, and preparations of meats	11,630	17,156	188	1,897	6,478	8,248
Butter	5,899	1,710	5,888	1,610	—	—
Cheese	7,230	6,494	6,864	5,978	233	343
Milk, processed	17,685	17,434	1	—	85	43
Milk and its products, *n.o.p.*	528	704	[1]	[1]	258	433
Oils, fish, seal and whale	2,356	2,053	1,548	1,440	533	503
Animal oils, fats, greases and wax, *n.o.p.*	7,459	5,990	4,353	4,072	642	167
Eggs	8,682	3,615	358	150	411	874
Sausage casings	2,854	3,188	454	554	1,624	1,572
Horsemeat, not for human consumption, and animal food, prepared	3,779	3,665	6	6	3,391	2,957
Animal products, *n.o.p.*	2,148	2,744	259	420	1,715	1,723
Totals, Animals and Animal Products	**355,975**	**319,945**	**48,542**	**35,088**	**229,092**	**204,790**

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[1] Less than $500.

14.—Principal Domestic Exports from Canada to All Countries, the United Kingdom and the United States, 1959 and 1960—continued

Item	All Countries		United Kingdom		United States	
	1959	1960	1959	1960	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000
III. Fibres, Textiles and Textile Products						
Cotton—						
Cotton rags and waste	712	774	58	81	287	304
Fabrics	1,971	5,170	3	2,847	825	625
Clothing (including socks and stockings)	865	1,775	43	497	244	232
Cotton manufactures, *n.o.p.*	507	510	1	50	85	54
Flax, Hemp and Jute—						
Waste bagging and cloth of jute	241	230	—	—	239	230
Flax, hemp and jute products, other	149	273	1	[1]	140	246
Wool—						
Raw wool (includes noils and tops)	2,021	1,609	891	559	1,049	1,002
Wool rags and waste	1,639	1,265	80	75	613	448
Wool fabrics	82	68	1	2	56	17
Clothing (except socks and stockings)	1,412	1,352	4	52	1,243	1,117
Wool manufactures, *n.o.p.*	173	232	15	21	151	202
Synthetic Fibres—						
Thread and yarn	4,278	11,921	51	3,063	175	232
Fabrics	689	2,541	130	431	110	118
Clothing (except socks and stockings)	432	678	12	141	80	244
Synthetic fibre manufactures, *n.o.p.*	444	1,140	2	13	112	722
Rags and waste, *n.o.p.*	1,400	1,282	8	22	578	675
Baler twine	[2]	2,717	[2]	—	[2]	2,717
Binder twine	586	368	—	—	586	368
Cordage, rope and twine, *n.o.p.*	4,778	1,538	[1]	1	2,961	68
Felt manufactures	1,368	1,861	79	169	60	7
Clothing, *n.o.p.* (including socks and stockings, *n.o.p.*)	663	1,244	5	579	278	191
Oilcloth and linoleum	270	256	—	[1]	2	1
Textile products, *n.o.p.*	316	412	11	40	126	201
Totals, Fibres, Textiles and Textile Products	**24,997**	**39,219**	**1,395**	**8,643**	**10,003**	**10,022**
IV. Wood, Wood Products and Paper						
Wood, Unmanufactured or Partially Manufactured—						
Logs	2,250	3,091	543	647	1,245	1,705
Pit props	947	200	828	200	31	—
Poles	3,811	5,063	—	—	3,757	4,983
Railroad ties	4,223	3,202	553	929	396	362
Billets and blocks	1,396	1,324	26	56	1,356	1,247
Lumber and timber	323,717	346,300	27,647	53,052	272,445	259,582
Laths	1,293	1,284	—	—	1,290	1,281
Pickets	676	717	—	—	676	717
Shingles	21,406	20,968	286	362	20,878	20,374
Veneers and plywoods	32,351	32,717	8,079	10,518	23,947	21,570
Christmas trees	6,926	6,442	—	—	6,883	6,375
Pulpwood	29,737	31,186	2,330	2,128	25,780	26,341
Spoolwood	753	710	515	469	238	242
Wood, unmanufactured, *n.o.p.*	1,292	1,797	[1]	—	1,148	1,312
Wood, Manufactured—						
Wood pulp	311,253	325,122	24,727	32,203	254,049	256,170
Furniture of wood	605	749	2	2	269	284
Match splints	1,249	1,270	1,074	1,100	—	—
Manufactures of wood, *n.o.p.*	4,955	5,984	731	893	3,616	4,131
Paper—						
Pulpboard, wallboard and paperboard	13,320	14,443	7,853	11,313	4,997	2,591
Book paper	9,392	9,696	423	571	7,445	7,464
Newsprint paper	722,271	757,930	51,586	60,163	616,730	631,230
Wrapping paper	7,098	5,408	4,025	3,259	1,737	997
Newsprint paper, mutilated or beater stock; and waste paper	3,531	3,270	289	111	2,806	2,692
Paper and manufactures of, *n.o.p.*	6,619	7,956	708	1,042	2,112	2,437
Books, newspapers and other printed and lithographed matter	4,891	5,089	287	494	3,913	3,700
Totals, Wood, Wood Products and Paper	**1,515,962**	**1,591,919**	**132,512**	**179,514**	**1,257,745**	**1,257,786**

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[1] Less than $500. [2] Included with "Cordage, rope and twine, *n.o.p.*".

14.—Principal Domestic Exports from Canada to All Countries, the United Kingdom and the United States, 1959 and 1960—continued

Item	All Countries		United Kingdom		United States	
	1959	1960	1959	1960	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000
V. Iron and Its Products						
Iron ore	157,814	155,472	22,428	27,722	117,810	101,903
Ferro-alloys	5,715	6,162	2,434	3,838	3,019	1,504
Pigs, ingots, blooms and billets	32,622	53,349	5	17,602	31,608	22,936
Scrap iron	12,781	13,675	[1]	162	7,607	4,666
Castings and forgings	4,043	4,057	8	23	3,971	3,857
Rolling-mill products	53,509	73,979	1,845	12,179	39,015	25,879
Tubes, pipes and fittings	16,493	7,436	10	180	15,501	6,575
Wire, iron	3,864	2,531	62	368	3,482	1,532
Engines and boilers and parts	40,827	47,664	877	1,749	25,351	27,179
Farm implements and machinery and parts	114,695	85,426	113	159	109,613	79,634
Hardware and cutlery	6,184	5,951	41	115	4,588	3,543
Machinery and parts (except agricultural)	48,403	67,074	1,948	5,270	18,713	26,323
Tools	2,895	3,498	273	160	502	548
Automobiles, freight	2,332	3,775	—	2	29	39
Automobiles, passenger	16,316	24,261	780	1,223	214	424
Automobile parts	16,655	23,818	74	167	6,985	3,785
Vehicles and parts, *n.o.p.* (see also Miscellaneous Commodities)	13,618	10,645	93	147	10,148	8,017
Ball bearings, roller bearings and parts	1,627	2,596	11	505	865	782
Lamps and lanterns of metal	1,107	822	13	9	5	6
Stoves and heating apparatus and parts	1,775	2,139	337	742	246	332
Other iron and steel, and manufactures of	10,067	10,893	277	469	6,250	5,959
Totals, Iron and Its Products	**563,344**	**605,225**	**31,630**	**72,792**	**405,520**	**325,425**
VI. Non-ferrous Metals and Their Products (except gold)						
Aluminum, and manufactures of	232,426	269,420	68,736	79,696	80,417	54,219
Brass, and manufactures of	5,837	7,899	158	304	2,668	1,965
Copper, and manufactures of	166,067	223,916	50,098	71,412	72,063	85,290
Lead, and manufactures of	25,531	26,140	6,264	8,528	15,193	11,253
Nickel	226,857	258,331	46,219	67,896	114,019	88,596
Precious metals, and manufactures of (except gold)	33,801	37,105	11,857	15,127	20,278	18,618
Zinc, and manufactures of	55,465	63,672	16,084	20,457	36,022	31,933
Clocks and watches and parts	1,035	1,108	10	6	95	60
Electrical apparatus, *n.o.p.* (including radio and wireless)	32,571	47,282	174	697	12,595	27,122
Printing materials	356	1,035	30	17	314	998
Uranium ores and concentrates	311,904	263,541	32,603	25,905	278,913	236,594
Ores, *n.o.p.*	5,249	4,714	1,274	419	218	474
Cobalt metal	1,203	1,368	174	164	921	789
Metallic scrap, dross and ashes, *n.o.p.*	1,969	1,697	38	53	1,712	1,423
Cadmium	2,244	2,627	999	1,372	1,127	1,211
Magnesium	3,880	3,223	1,779	2,290	86	265
Selenium and salts	1,846	2,796	1,114	1,602	665	744
Other non-ferrous metals and manufactures of	6,543	6,594	870	1,386	4,411	3,356
Totals, Non-ferrous Metals and Their Products	**1,114,784**	**1,222,476**	**238,483**	**297,329**	**641,718**	**564,910**
VII. Non-metallic Minerals and Their Products (except chemicals)						
Asbestos, and manufactures of	111,141	121,112	9,129	9,387	54,946	54,351
Clay, and manufactures of	5,108	5,266	1	28	3,797	3,755
Coal	3,582	6,789	—	—	2,496	2,242
Coke	3,343	2,583	1,208	393	1,935	2,167
Coal products, *n.o.p.*	1,009	2,997	—	[1]	1,009	2,995
Glass, and manufactures of	1,935	1,896	2	13	1,377	1,166
Petroleum and its products	80,187	102,754	12	15	79,627	101,666
Abrasives	28,711	32,606	2,922	3,960	25,187	28,016
Lime, plaster and cement	15,624	10,604	2	19	15,472	10,461
Stone and its products, *n.o.p.*	7,737	7,502	292	222	6,629	6,820
Carbon and graphite electrodes	340	735	194	—	12	104
Salt	4,640	3,461	—	56	4,630	3,398
Gas exported by pipeline	16,953	18,051	—	—	16,953	18,051
Other non-metallic minerals, and manufactures of	13,924	23,213	386	2,484	10,112	13,080
Totals, Non-metallic Minerals and Their Products	**294,235**	**339,569**	**14,147**	**16,577**	**224,183**	**248,270**

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[1] Less than $500.

14.—Principal Domestic Exports from Canada to All Countries, the United Kingdom and the United States, 1959 and 1960—concluded

Item	All Countries		United Kingdom		United States	
	1959	1960	1959	1960	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000
VIII. Chemicals and Allied Products						
Acids	3,977	5,205	1,177	1,445	1,073	1,580
Alcohols, industrial	535	594	153	285	198	23
Drugs, medicinal and pharmaceutical preparations	6,759	5,726	389	226	377	430
Fertilizers	48,792	52,348	1	1	40,836	46,545
Paints and varnishes	3,237	2,409	7	100	1,365	1,103
Calcium compounds	4,283	3,345	213	4	2,453	1,786
Soda and sodium compounds	1,357	1,537	141	9	952	1,208
Cobalt oxides and cobalt salts	1,578	1,753	1,316	1,625	159	61
Inorganic chemicals, *n.o.p.*	2,165	3,294	—	—	2,160	3,289
Plastics and products, *n.o.p.*	25,713	7,455	2,222	1,156	2,456	885
Polystyrene	8,382	7,583	951	1,905	430	67
Radioactive materials, *n.o.p.*	1,971	1,077	152	121	1,336	771
Chemicals and allied products, *n.o.p.*	92,980	145,361	20,660	27,210	32,115	34,471
Totals, Chemicals and Allied Products	**201,729**	**237,687**	**27,382**	**34,088**	**85,910**	**92,220**
IX. Miscellaneous Commodities						
Toys, dolls and other amusement and sporting goods, *n.o.p.*	3,253	3,621	21	77	2,796	3,040
Brushes	165	170	13	22	9	2
Containers, *n.o.p.*	2,171	2,825	33	66	554	587
Household and Personal Equipment, *n.o.p.*—						
Pens, pencils and parts	477	739	100	51	5	39
Power-operated refrigerators and parts	565	860	[1]	78	58	101
Other household and personal equipment, *n.o.p.*	1,282	2,112	72	264	363	793
Musical instruments and parts	756	1,261	1	3	744	1,242
Cameras, films and philosophical and scientific apparatus	9,438	13,317	575	928	4,160	6,747
Ships and vessels and materials for ships	12,390	2,053	10,729	22	1,098	1,215
Aircraft and parts	24,960	20,745	257	876	20,513	14,699
Vehicles and parts, *n.o.p.* (see also Iron)	292	272	—	1	273	261
Cartridges	185	342	5	75	79	61
Contractors' outfits and supplies	4,563	6,523	—	37	90	5,040
Electric energy	13,955	15,526	—	—	13,955	15,526
Shipments under $50 in value	4,716	4,612	78	100	3,849	3,643
All other articles exported	2,576	1,556	409	144	2,010	1,325
Totals, Miscellaneous Commodities	**81,742**	**76,534**	**12,293**	**2,744**	**50,559**	**54,321**
Grand Totals, Exports	**5,021,672**	**5,264,052**	**785,802**	**915,290**	**3,083,151**	**2,932,171**

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[1] Less than $500.

15.—Principal Imports into Canada for Consumption from All Countries, the United Kingdom and the United States, 1959 and 1960

Item	All Countries		United Kingdom		United States	
	1959	1960	1959	1960	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000
I. Agricultural and Vegetable Products (except chemicals, fibres and wood)						
A. MAINLY FOOD						
Fruits—						
Fresh	89,622	93,022	18	41	60,657	61,273
Dried	17,231	16,205	160	201	7,236	7,813
Canned or preserved	24,603	26,183	1,161	1,086	14,767	15,677
Fruit juices and fruit syrups	28,178	26,016	112	99	27,468	25,305
Cocoanuts and preparations of	2,055	1,967	1	15	1,024	948
Nuts, not shelled and shelled	18,205	19,944	117	242	7,105	5,754

15.—Principal Imports into Canada for Consumption from All Countries, the United Kingdom and the United States, 1959 and 1960—continued

Item	All Countries		United Kingdom		United States	
	1959	1960	1959	1960	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000
I. Agricultural and Vegetable Products (except chemicals, fibres and wood)—concluded						
A. MAINLY FOOD—concluded						
Vegetables—						
Fresh	46,666	52,267	20	[1]	42,049	46,225
Dried	2,069	2,612	2	2	1,959	2,464
Canned	8,114	8,536	100	113	6,016	5,909
Pickles, sauces and catsups	4,051	3,713	126	139	3,066	2,626
Grains and Farinaceous Products—						
Grain (including rice)	49,385	57,463	9	23	45,967	53,308
Biscuits, and other bakery products and prepared foods	8,760	9,023	4,312	4,277	3,586	3,881
Milled products and farinaceous products, *n.o.p.*	1,971	1,866	20	18	1,767	1,614
Sugar and Its Products—						
Confectionery, including candy	12,881	15,363	6,303	6,803	3,593	5,113
Molasses and syrups	5,030	4,128	90	86	1,350	1,058
Sugar and sugar products, *n.o.p.*	56,881	50,717	1	1	17	15
Cocoa beans and cocoa and chocolate preparations	20,699	18,213	4,423	4,364	4,153	2,589
Coffee and chicory	59,649	56,569	145	104	12,179	12,134
Spices	2,902	3,858	310	441	840	871
Tea	23,104	23,605	4,326	3,530	378	282
Vegetable products, mainly food, *n.o.p.*	6,049	6,253	543	467	5,273	5,429
TOTALS, A. MAINLY FOOD	488,103	497,522	22,301	22,053	250,449	260,288
B. OTHER THAN FOOD						
Beverages, Alcoholic—						
Ale, beer, porter and stout	395	485	339	390	[1]	[1]
Whisky and other distilled beverages	16,457	15,772	8,904	8,724	1,316	1,156
Wines	6,096	6,509	500	512	351	364
Gums and resins	8,137	8,809	262	152	6,622	7,922
Oil cake and oil cake meal	14,352	10,644	—	—	14,350	10,642
Oils, vegetable	29,142	27,206	3,034	2,140	14,471	15,961
Plants, shrubs, trees, vines and florist stock	7,617	7,764	16	19	4,486	4,663
Rubber, crude and partially manufactured	52,063	42,587	658	600	25,669	17,678
Rubber, manufactures of	41,080	42,127	3,445	3,325	28,131	29,251
Seeds	7,331	6,856	426	278	5,819	5,677
Tobacco, unmanufactured	3,294	3,950	7	—	2,358	2,852
Tobacco, manufactured	2,189	2,222	267	293	1,428	1,376
Vegetable products, not food, *n.o.p.*	7,769	8,810	225	264	6,822	7,666
TOTALS, B. OTHER THAN FOOD	195,923	183,743	18,084	16,697	111,827	105,206
Totals, Agricultural and Vegetable Products	**684,026**	**681,265**	**40,385**	**38,750**	**362,276**	**365,495**
II. Animals and Animal Products (except chemicals and fibres)						
Animals, Living—						
Animals, pure bred, for improvement of stock	3,105	3,735	375	165	2,703	3,535
Common livestock	8,511	2,239	35	21	8,465	2,210
Animals, living, *n.o.p.*	1,519	1,397	45	11	1,099	1,046
Bone, ivory and shell products	1,145	1,070	389	326	638	623
Fish and Fishery Products, *n.o.p.*—						
Fish, fresh and frozen	2,388	2,347	18	4	1,270	1,191
Fish, salted, dried, pickled and smoked	812	861	289	245	52	47
Fish, canned or preserved, *n.o.p.*	4,266	4,693	110	111	224	1,016
Molluscs and crustaceans	6,251	6,395	2	2	4,536	4,643
Sponges and other articles of the fisheries, *n.o.p.*	1,036	1,311	7	6	766	801
Fur skins, undressed	20,878	19,065	4,203	4,560	13,284	11,160
Fur skins, wholly or partially dressed, and manufactures of fur	4,846	4,393	460	288	3,563	3,483

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[1] Less than $500.

15.—Principal Imports into Canada for Consumption from All Countries, the United Kingdom and the United States, 1959 and 1960—continued

Item	All Countries		United Kingdom		United States	
	1959	1960	1959	1960	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000
II. Animals and Animal Products (except chemicals and fibres)—concluded						
Hair and bristles, and manufactures of	1,368	1,515	759	868	389	356
Hides and skins, raw (except fur skins)	11,043	8,680	34	53	10,449	8,084
Leather, unmanufactured	12,936	10,611	6,723	5,383	4,927	4,313
Leather, manufactured	14,136	14,367	5,236	5,103	4,586	3,629
Meats, fresh and frozen	14,673	22,883	10	—	5,774	15,009
Meats, other, and preparations of meat	14,793	13,734	339	316	7,669	8,932
Milk and its products	6,556	7,160	125	70	1,033	1,052
Oils, fish, seal and whale	992	1,077	288	224	556	696
Animal oils, fats, greases and wax, *n.o.p.*	2,238	3,945	40	58	2,020	3,731
Gelatine, edible	1,238	962	126	73	760	653
Sausage casings, cleaned	3,226	3,442	—	—	46	36
Animal products, *n.o.p.*	8,677	7,811	783	856	7,062	6,221
Totals, Animals and Animal Products	**146,635**	**143,693**	**20,395**	**18,743**	**81,872**	**82,468**
III. Fibres, Textiles and Textile Products						
Cotton—						
Raw and unmanufactured	45,049	51,537	42	23	21,872	48,729
Yarn, thread and cordage	8,829	9,810	3,062	3,066	5,458	5,628
Piece goods (fabrics)	70,058	75,150	3,815	3,673	50,770	53,305
Lace and embroideries	1,470	1,670	103	94	319	318
Clothing and wearing apparel	19,436	21,144	1,428	1,360	5,527	5,610
Cotton manufactures, *n.o.p.*	14,015	13,611	1,021	1,001	8,971	8,764
Flax, Hemp and Jute—						
Yarn, thread and twine	1,834	1,810	1,188	1,127	95	73
Piece goods (fabrics)	14,169	13,751	1,707	1,790	891	823
Other flax, hemp and jute and manufactures of	9,921	9,056	2,059	1,987	4,172	3,755
Silk—						
Piece goods (fabrics)	7,334	8,196	128	153	4,339	4,207
Clothing and wearing apparel	2,348	2,326	254	231	966	974
Other silk, and manufactures of	288	275	25	12	229	239
Wool—						
Raw and unmanufactured	25,872	27,217	15,201	15,001	3,102	3,437
Yarns and warps	4,837	5,709	4,177	4,717	196	131
Piece goods (fabrics)	35,668	35,327	29,202	27,222	1,117	1,258
Carpets and rugs	10,293	9,408	3,130	3,546	467	421
Clothing and wearing apparel	14,568	17,066	7,763	8,576	1,396	1,470
Wool manufactures, *n.o.p.*	1,593	1,704	735	782	612	586
Synthetic Textile Fibres—						
Unmanufactured synthetic textile fibre	5,850	5,526	316	635	4,353	4,224
Yarn, twist and thread	8,975	6,847	166	107	5,611	5,053
Piece goods (fabrics)	27,927	27,455	1,030	1,013	23,405	21,247
Clothing and wearing apparel	20,208	17,863	2,010	944	6,614	6,510
Synthetic textile fibre manufactures, *n.o.p.*	7,868	7,878	282	315	6,499	6,447
Kapok; manila fibre; sisal, istle and tampico fibre; and other vegetable fibres—not coloured or further manufactured than dried, cleaned, cut to size, ground and sifted	7,699	7,614	29	16	3,952	4,125
Grasses and vegetable fibres, and manufactures of, *n.o.p.*	1,108	1,065	113	93	400	365
Mixed Textile Products—						
Rags and waste	6,077	6,150	319	329	5,232	5,286
Cordage, rope, twine, threads, fish nets and nettings, and fish lines, *n.o.p.*	7,819	7,965	3,682	3,127	731	840
Oilcloths and other coated or impregnated cloth	20,615	20,801	5,315	4,953	14,035	14,827
Lace and embroideries, *n.o.p.*	2,751	3,411	308	271	1,818	2,114
Hats, caps, bonnets, berets, hoods and shapes	4,712	4,924	546	582	2,469	2,268
Clothing and wearing apparel, *n.o.p.*	3,013	3,328	82	89	2,021	1,955
Hat braids, hat sweats, etc., for hats and caps	891	870	7	11	555	521
Other textile products	7,055	7,085	891	880	4,879	4,758
Totals, Fibres, Textiles and Textile Products	**420,152**	**433,549**	**90,137**	**87,726**	**193,075**	**220,269**

15.—Principal Imports into Canada for Consumption from All Countries, the United Kingdom and the United States, 1959 and 1960—continued

Item	All Countries		United Kingdom		United States	
	1959	1960	1959	1960	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000
IV. Wood, Wood Products and Paper						
Wood, Unmanufactured or Partially Manufactured—						
Logs and unmanufactured round timber	10,770	13,804	—	—	10,770	13,799
Lumber and timber, *n.o.p.*	37,332	30,498	11	6	34,676	28,334
Plywoods, veneers and other sawmill and planing mill products, *n.o.p.*	17,057	8,956	512	44	8,940	3,179
Pulpwood and other unmanufactured wood	3,812	5,032	—	—	3,712	4,928
Wood, Manufactured—						
Barrels, staves, headings and other cooperage	1,664	2,172	31	[1]	1,632	2,171
Corks and other manufactures of corkwood or cork bark	3,401	2,886	88	61	1,011	849
Wood pulp	8,967	8,657	—	—	8,093	7,996
Fibre, vulcanized, kartavert, indurated fibre and like material, and manufactures of, *n.o.p.*	1,206	995	12	14	1,088	866
Furniture (except of metal)	10,479	10,626	220	217	7,945	7,628
Manufactures of wood, *n.o.p.*	12,432	12,713	421	477	9,653	9,181
Paper—						
Wallboard and other pulpboards and fibreboards	20,117	19,651	232	233	18,692	17,815
Printing paper	5,623	6,058	516	646	5,076	5,350
Wrapping and packing paper	3,058	2,864	36	38	2,938	2,717
Writing, bond and ledger papers	1,470	1,707	36	32	1,411	1,640
Waster paper of all kinds	1,607	1,209	—	—	1,607	1,209
Albumenized and other chemically prepared papers for photographers' use, *n.o.p.*	4,272	5,195	128	235	3,305	3,648
Cigarette paper	1,647	1,516	[1]	1	1,459	1,365
Cable insulating paper	1,606	1,606	44	65	1,525	1,509
Shipping and other containers of paperboard and fibreboard	4,411	4,538	89	89	4,253	4,325
Paper, and manufactures of, *n.o.p.*	24,461	24,565	1,276	1,408	22,592	22,537
Books and Printed Matter—						
Newspapers, magazines, charts, maps, music and photographs	39,996	39,570	475	645	38,673	37,947
Printed advertising matter, commercial blank forms, pictorial post cards, and other printed and lithographed matter, *n.o.p.*	17,264	17,744	824	931	15,659	15,889
Bibles and prayer books, psalm and hymn books, text books, and other books and pamphlets	39,620	43,559	3,358	4,076	31,551	33,706
Totals, Wood, Wood Products and Paper	**272,274**	**266,123**	**8,312**	**9,219**	**236,261**	**228,589**
V. Iron and Its Products						
Iron ore	27,129	48,370	—	1	26,009	46,625
Ferro-alloys	7,100	8,863	583	609	4,147	4,243
Pigs, ingots, blooms and billets	3,445	4,600	59	85	2,734	4,131
Scrap iron	23,803	18,598	17	31	23,551	18,563
Castings and forgings	12,575	8,465	4,150	1,827	8,257	6,236
Rolling-Mill Products—						
Bars and rods	18,925	14,868	2,254	1,913	5,933	6,277
Plates, sheets and strip	59,667	61,075	8,120	6,328	45,641	48,985
Structural shapes and sheet piling	52,671	57,063	11,358	11,348	28,334	33,858
Rails and railway track material	6,068	1,752	257	201	5,709	1,410
Pipes, tubes and fittings	55,305	48,405	12,256	11,444	35,145	28,608
Wire	20,397	18,491	7,000	6,901	8,417	6,538
Chains	6,099	5,698	1,223	1,252	3,964	3,559
Engines, Locomotives and Boilers—						
Engines, diesel and semi-diesel, and parts	38,928	28,945	8,506	6,357	29,682	21,314
Engines, internal combustion, for motor trucks, motor buses, fire fighting vehicles, ambulances and hearses, and parts	14,099	11,754	361	164	13,682	11,500

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[1] Less than $500.

15.—Principal Imports into Canada for Consumption from All Countries, the United Kingdom and the United States, 1959 and 1960—continued

Item	All Countries		United Kingdom		United States	
	1959	1960	1959	1960	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000
V. Iron and Its Products—continued						
Engines, Locomotives and Boilers—concluded						
Engines, automobile and motor vehicle, and parts, *n.o.p.*	11,691	14,246	875	784	10,498	12,573
Engines for aircraft, and parts	37,280	50,515	17,011	26,109	19,589	24,114
Engines, locomotives and boilers, and parts, *n.o.p.*	33,003	35,958	1,050	1,227	31,543	34,237
Farm Implements and Machinery—						
Cream separators and other dairy machinery	6,828	6,163	208	217	5,571	4,982
Harvesting machinery and implements, *n.o.p.*	11,517	10,879	72	52	11,113	10,290
Ploughs, drills and other tillage and planting implements	15,780	14,845	274	433	15,478	14,354
Harvesters combined with threshing machines, and parts	26,979	25,325	58	39	26,898	25,221
Seed separation machinery, *n.o.p.*	968	836	—	—	968	836
Hay presses and parts	10,339	11,018	81	139	10,117	10,728
Spraying and dusting machines	2,028	2,114	60	25	1,934	2,074
Tractors	115,224	83,340	11,454	9,704	103,176	72,507
Parts of tractors, and accessories, including parts therefor	56,845	48,201	2,903	3,265	53,476	44,344
Farm implements and machinery, and parts, *n.o.p.*	27,312	25,938	760	608	26,210	24,879
Hardware and Cutlery—						
Cutlery	5,729	5,441	911	1,010	1,693	1,622
Nails, spikes and tacks	3,199	2,171	979	523	433	370
Butts, hinges, bolts, nuts, washers, rivets and screws	11,561	9,846	1,449	1,184	8,274	7,257
Hardware, *n.o.p.*	7,871	7,806	1,351	1,408	5,772	5,711
Machinery (except agricultural)—						
Sewing machines, washing machines, vacuum cleaners and other household machinery	31,271	28,663	2,106	1,862	25,573	23,590
Ore crushers, rock drills, well-drilling and other mining and metallurgical machinery	67,771	65,917	2,769	2,723	63,069	60,352
Office or business machinery	36,527	42,017	3,288	3,049	28,024	33,381
Printing and bookbinding machinery	36,363	31,928	1,873	2,653	30,546	25,771
Air and gas compressing machinery, *n.o.p.*	12,492	12,358	1,324	1,311	10,771	10,617
Bakery machinery and apparatus	3,356	3,725	98	103	3,194	3,451
Cranes, hoists and derricks, and parts, *n.o.p.*	10,663	10,749	800	806	8,817	9,150
Ice-making and refrigerating machinery, *n.o.p.*	9,704	11,499	298	258	9,385	11,195
Logging machinery	9,339	8,559	153	72	9,039	8,287
Metalworking machinery	41,120	38,959	4,187	3,995	33,157	31,326
Motion-picture projectors and other equipment for moving pictures	4,539	4,630	67	71	3,971	3,867
Paper mill machines, *n.o.p.*	6,778	8,314	1,402	2,846	5,243	5,135
Pumps, power, and parts, *n.o.p.*	11,747	11,332	1,236	810	10,242	10,139
Concrete road-paving machines and other equipment for road paving	8,142	6,124	351	356	7,745	5,768
Sand cast rolls and chilled cast iron rolls, and forged steel rolls	4,725	5,143	964	1,290	3,723	3,741
Shovels, power, and parts	19,411	10,950	260	178	19,008	10,596
Yarn, cordage and fabric machinery	19,933	19,639	3,222	3,641	13,992	13,537
Air-conditioning apparatus	13,143	16,567	453	350	12,564	16,089
Bulldozers, earthmovers and parts	17,478	13,327	715	850	16,711	12,456
Conveying equipment and parts	9,143	6,453	2,970	744	5,394	5,144
Woodworking machinery, and parts, *n.o.p.*	8,930	7,617	475	308	7,965	6,799
Machinery and parts, *n.o.p.*	202,658	215,322	13,620	13,001	179,017	191,228
Stamped and coated products	16,628	14,757	385	377	15,679	13,843
Tools and hand implements	36,517	34,279	4,175	4,224	27,375	25,349
Vehicles (see also Miscellaneous Commodities)—						
Automobiles, freight, new	29,714	23,219	3,587	3,346	22,873	17,315
Automobiles, passenger, new	199,601	220,144	84,626	104,815	62,386	69,638
Automobile parts	288,596	296,571	6,008	6,867	279,407	285,343
Factory and warehouse trucks, motor driven, and parts	1,440	1,249	51	76	1,389	1,152
Fork lift trucks, and parts	12,198	10,438	583	648	11,468	9,737
Railway cars, and parts	6,383	4,586	480	182	5,638	4,188
Vehicles, and parts, *n.o.p.*	9,176	9,257	3,232	3,760	4,351	4,130

15.—Principal Imports into Canada for Consumption from All Countries, the United Kingdom and the United States, 1959 and 1960—continued

Item	All Countries		United Kingdom		United States	
	1959	1960	1959	1960	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000
V. Iron and Its Products—concluded						
Ball and roller bearings, and parts	22,620	22,705	1,576	1,550	17,912	17,052
Bottles, cylinders, drums, barrels and tanks	4,468	3,920	147	200	4,297	3,681
Furniture of metal	9,792	9,713	243	272	9,356	9,167
Guns, rifles and other firearms	6,008	5,145	922	761	4,191	3,427
Scales, balances, weighing beams and parts	3,814	4,484	130	209	3,384	3,934
Stoves and other heating and cooking apparatus for electricity, gas, oil, coal, wood or other fuel, and parts	39,426	33,101	567	963	38,620	31,837
Valves, iron	10,912	11,507	1,611	1,105	9,102	10,090
Other iron and steel, and manufactures of	79,199	69,849	7,518	5,459	67,850	60,760
Totals, Iron and Its Products	**2,092,093**	**2,046,307**	**254,110**	**271,276**	**1,666,356**	**1,610,213**
VI. Non-ferrous Metals and Their Products (except gold)						
Aluminum—						
Bauxite and alumina	35,958	45,041	5	3	1,135	1,176
Aluminum, and manufactures of, *n.o.p.*	26,383	27,073	4,188	3,418	19,525	20,793
Brass—						
Brass valves, plated or not, and parts	4,937	4,950	208	202	4,313	4,264
Plumbers' brass goods, plated or not	5,727	4,909	186	44	4,595	4,044
Brass, and manufactures of, *n.o.p.*	16,560	14,065	2,647	1,486	13,036	11,809
Copper, and manufactures of	6,583	6,252	1,300	1,249	4,963	4,727
Nickel, and manufactures of	5,687	5,708	270	197	5,058	5,082
Precious Metals—						
Electro-plated ware and gilt ware, *n.o.p.*	14,072	13,398	961	986	11,741	10,900
Platinum crucibles and other manufactures of platinum	8,295	14,934	6,238	12,690	2,057	2,244
Precious metals, and manufactures of, *n.o.p.*	3,561	4,591	1,347	447	1,235	3,527
Tin, blocks, pigs, bars or granular form	9,182	8,258	1,535	221	2,189	776
Zinc, and manufactures of	3,396	3,091	258	259	2,875	2,669
Alloys, *n.o.p.*	1,955	1,871	805	872	1,053	880
Clocks and watches, and parts	11,449	11,730	537	921	2,226	2,304
Electrical Apparatus, *n.o.p.*—						
Dynamos or generators, and parts, *n.o.p.*	10,181	9,604	1,734	1,892	7,554	7,170
Electric lamps, lights and fixtures	15,625	15,009	128	144	13,527	12,529
Electric motors and parts, *n.o.p.*	17,455	13,614	3,131	2,727	13,983	10,658
Rheostats, controllers and other starting devices	13,151	12,758	640	435	12,267	12,021
Switches, switchboards and parts	12,799	11,707	1,016	802	10,496	10,073
Telephone apparatus and parts	11,728	11,954	3,877	3,311	7,532	8,214
Radio, television tubes	7,827	7,804	420	350	6,270	5,643
Radio and wireless apparatus, and parts, *n.o.p.*	32,778	36,468	6,150	8,818	24,889	26,025
Radio receiving sets	11,657	11,852	301	348	2,321	2,219
Radio set parts	6,010	5,736	2,042	2,170	3,585	3,313
Radio tube parts	7,450	6,751	65	70	7,049	6,357
Electric precision instruments	13,314	15,003	1,051	980	11,623	13,305
Electric steam turbo generator sets	26,482	15,698	24,733	14,732	1,737	86
Electrical apparatus, *n.o.p.*	82,944	86,514	4,526	4,950	71,785	74,401
Gas apparatus	2,305	2,314	162	298	2,057	1,913
Stereotypes, electrotypes and other printing materials	2,724	2,899	44	53	2,609	2,782
Chrome ore and ores of metals, *n.o.p.*	4,493	6,308	5	2	993	1,759
Manganese ore	5,017	2,544	26	13	1,244	613
Buckles, clasps, eyelets, hooks and eyes, dome, snap or other fasteners, of metal, coated or not, *n.o.p.* (not being jewellery); slide, hookless, or zipper fasteners	2,146	1,980	115	113	1,873	1,730
Articles, *n.o.p.*, of metal, for ships	3,963	3,976	1,232	1,054	2,532	2,684
Wire, non-ferrous, *n.o.p.*	8,116	8,071	3,180	2,281	4,752	5,341
Other non-ferrous metals, and manufactures of	19,345	16,686	1,186	1,164	13,962	12,022
Totals, Non-ferrous Metals and Their Products	**471,253**	**471,120**	**76,249**	**69,699**	**300,640**	**296,054**

15.—Principal Imports into Canada for Consumption from All Countries, the United Kingdom and the United States, 1959 and 1960—continued

Item	All Countries		United Kingdom		United States	
	1959	1960	1959	1960	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000
VII. Non-metallic Minerals and Their Products (except chemicals)						
Asbestos, and manufactures of	4,078	4,498	743	1,012	3,083	3,065
Clay, and Manufactures of—						
Clays	5,157	4,871	719	668	4,423	4,196
Bricks and tiles	19,050	18,864	1,591	1,604	16,084	15,699
Pottery and chinaware	16,664	16,300	11,721	11,125	2,427	2,359
Clay manufactures, *n.o.p.*	7,424	6,813	1,487	1,314	5,195	4,904
Coal, anthracite	17,935	13,577	1,390	964	16,544	12,613
Coal, bituminous, and coal, *n.o.p.*	66,553	63,383	—	5	66,553	63,378
Coke	10,945	11,234	5	3	10,941	11,230
Coal products, *n.o.p.*	5,089	7,385	1,828	2,275	3,015	4,202
Glass—						
Tableware, bottles, flasks, lamp bulbs, and other glass, cut, pressed or blown	24,772	25,366	1,359	1,188	20,399	20,840
Plate, sheet and common, colourless window glass	25,884	20,276	5,074	3,714	10,853	7,180
Glass, and manufactures of, *n.o.p.*	12,317	12,275	993	744	7,892	7,750
Petroleum and Products—						
Petroleum, crude	277,888	283,565	—	—	1,026	961
Fuel oil, *n.o.p.*	77,821	66,816	405	30	24,553	16,235
Kerosene, *n.o.p.*	2,346	2,927	—	606	1,673	780
Gasoline	30,260	14,790	—	—	18,657	11,868
Lubricating oils	11,857	12,826	61	76	11,769	12,714
Petroleum greases and lubricating greases, *n.o.p.*	2,139	2,184	13	14	2,124	2,169
Paraffin wax	2,864	2,585	[1]	1	2,744	2,545
Petroleum products, *n.o.p.*	10,436	11,604	15	12	10,075	11,315
Stone—						
Diamond dust and other abrasives	14,383	12,099	1,027	1,033	12,507	10,037
Building and paving stone	1,511	1,488	1	43	1,096	1,002
Lime, plaster and cement	2,944	2,478	285	283	1,807	1,510
Phosphate rock	7,468	8,320	—	—	7,126	8,000
Silica sand	2,525	2,405	—	—	2,487	2,395
Roofing granules	1,788	1,199	—	—	1,788	1,199
Stone, and manufactures of, *n.o.p.*	7,122	8,288	200	201	5,238	5,368
Diamonds, unset	9,765	8,595	1,324	951	1,474	1,172
Gas for heating, cooking or illuminating, imported by pipeline	3,797	1,634	—	—	3,797	1,634
Salt	1,578	841	28	10	1,186	485
Sulphur and brimstone	6,925	6,629	[1]	[1]	6,834	6,627
Other non-metallic minerals, and manufactures of	14,321	16,054	885	1,370	11,470	12,714
Totals, Non-metallic Minerals and Their Products	**705,606**	**672,170**	**31,151**	**29,248**	**296,840**	**268,146**
VIII. Chemicals and Allied Products						
Acids	7,709	7,489	1,174	1,135	5,173	4,901
Alcohols, industrial	1,468	560	—	—	1,468	560
Drugs, medicinal and pharmaceutical preparations	32,428	32,613	3,063	3,334	25,723	25,429
Dyeing and Tanning Materials—						
Coal-tar products	9,278	9,408	1,456	1,222	4,926	5,093
Dyeing and tanning materials, *n.o.p.*	3,047	2,520	229	201	1,606	1,477
Explosives	1,443	1,951	102	79	1,136	1,730
Fertilizers	12,801	14,225	19	66	11,338	11,835
Pigments, Paints and Varnishes—						
Chemical and mineral earth pigments	17,406	15,148	5,915	5,008	10,626	9,567
Paints and varnishes, *n.o.p.*	6,178	6,562	570	580	5,511	5,838

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[1] Less than $500.

15.—Principal Imports into Canada for Consumption from All Countries, the United Kingdom and the United States, 1959 and 1960—continued

Item	All Countries		United Kingdom		United States	
	1959	1960	1959	1960	1959	1960
	$'000	$'000	$'000	$'000	$'000	$'000
VIII. Chemicals and Allied Products —concluded						
Perfumery, cosmetics and toilet preparations	2,287	2,705	183	199	1,427	1,723
Soap	3,193	2,143	144	146	2,996	1,944
Inorganic Chemicals, *n.o.p.*—						
Ammonia and its compounds	1,061	991	82	83	935	860
Compounds of bromine, chlorine and iodine	1,630	1,668	2	2	1,544	1,612
Compounds of calcium	2,319	2,489	99	145	2,100	2,220
Potash and potassium compounds, *n.o.p.*	1,772	1,924	202	181	1,268	1,403
Soda and sodium compounds, *n.o.p.*	15,118	16,848	2,676	2,624	11,383	12,599
Other inorganic chemicals, *n.o.p.*	2,908	2,972	609	690	2,197	1,758
Chemicals and Allied Products, *n.o.p.*—						
Glycerine	2,046	1,734	—	—	2,015	1,718
Ink, printing, writing and rotogravure	1,841	2,076	317	308	1,396	1,604
Butadiene	1,695	2,920	—	—	1,695	2,920
Chemicals for synthetic resins	15,016	21,420	84	131	13,670	20,117
Plastics and products	90,092	97,650	2,987	2,919	82,170	88,363
Other chemicals and allied products, *n.o.p.*	94,252	90,637	6,332	5,853	82,821	77,453
Totals, Chemicals and Allied Products	**326,987**	**338,652**	**26,246**	**24,909**	**275,125**	**282,723**
IX. Miscellaneous Commodities						
Amusement and Sporting Goods, *n.o.p.*—						
Bagatelle and other game tables and boards	1,116	989	121	136	933	784
Dolls and toys	12,569	12,220	2,028	2,018	5,559	4,865
Films	15,900	15,300	2,395	2,442	11,705	10,972
Sportsmen's fishing rods and tackle, *n.o.p.*	5,030	4,057	311	237	3,396	2,693
Other amusement and sporting goods, *n.o.p.*	1,311	1,365	187	195	996	1,038
Brushes of all kinds	2,014	1,983	478	448	1,109	1,146
Packages and containers, not including contents	14,309	15,260	4,076	3,942	3,302	3,887
Household and Personal Equipment, *n.o.p.*—						
Boots, shoes and slippers (except rubber and leather)	1,938	3,141	333	289	559	430
Buttons of all kinds	1,807	1,694	47	47	1,157	1,044
Cases, boxes and writing desks, fancy	2,317	1,728	221	147	1,474	1,014
Hearing aids and similar appliances for deaf persons, and parts; electronic equipment and parts for ear-training the deaf	2,750	2,806	42	104	2,676	2,651
Jewellery, *n.o.p.*	5,148	5,250	224	187	2,494	2,346
Pocketbooks, portfolios, purses, reticules, card cases, fly books, and musical instrument cases and parts	7,883	9,186	1,010	1,010	4,622	5,361
Refrigerators, electric and other, and parts	37,917	28,896	3,361	2,643	34,479	26,204
Spectacle and eye-glass frames, and parts for	4,053	4,025	11	21	3,627	3,607
Trunks, valises, hat boxes, carpet bags and tool bags	2,278	1,913	367	290	1,692	1,378
Other household and personal equipment, *n.o.p.*	4,452	4,397	933	788	1,987	2,103
Musical instruments and parts	12,457	12,674	1,089	947	8,660	8,398
Scientific and Educational Equipment—						
Cameras and parts	8,736	8,808	44	35	4,722	4,623
Surgical and dental instruments	14,286	16,219	529	790	12,292	13,829
Optical, philosophical and mathematical instruments, *n.o.p.*, and parts	5,314	5,059	596	332	3,063	3,072
Other scientific and educational equipment, *n.o.p.*	27,856	27,855	1,869	1,707	22,892	23,152
Ships and vessels	5,626	9,762	378	484	3,949	4,685
Vehicles, *n.o.p.* (see also Iron)—						
Aircraft and parts, excluding engines and parts	76,745	116,494	15,964	13,727	59,254	102,284
Other vehicles, *n.o.p.*	13,220	9,825	186	225	12,903	9,454
Paintings, statues and other works of art	4,039	3,752	1,068	991	1,143	1,263
Goods returned within five years after having been exported	10,337	24,191	675	878	8,583	20,721

15.—Principal Imports into Canada for Consumption from All Countries, the United Kingdom and the United States, 1959 and 1960—concluded

Item	All Countries		United Kingdom		United States	
	1959	1960	1959	1960	1959	1960
IX. Miscellaneous Commodities—concluded	$'000	$'000	$'000	$'000	$'000	$'000
Rescue apparatus	2,435	2,465	28	22	2,375	2,415
Communion sets, rosaries, articles for religious services	1,988	1,939	51	49	581	577
Biological products, animal or vegetable, *n.o.p.*, for parenteral administration in the diagnosis or treatment of diseases	2,418	2,150	162	122	2,246	2,003
Cartridges, metallic and other, and ammunition, *n.o.p.*	3,809	2,001	180	228	3,370	1,560
Pens, penholders, pencils and rulers	3,404	3,207	79	102	2,982	2,784
Precious stones, and imitations of (except diamonds)	2,474	2,886	293	327	547	695
Shipments under $50 in value	54,514	53,764	1,323	1,285	51,692	50,787
Wax, vegetable and mineral, *n.o.p.*, and wax and manufactures of, *n.o.p.*	1,817	1,728	13	10	1,258	1,255
All other articles imported	15,630	20,480	914	2,153	12,339	14,154
Totals, Miscellaneous Commodities	**389,895**	**439,468**	**41,588**	**39,360**	**296,619**	**339,232**
Grand Totals, Imports	**5,508,921**	**5,492,348**	**588,573**	**588,930**	**3,709,065**	**3,693,189**

Section 5.—Exports and Imports by Degree of Manufacture and by Purpose

The tables in this Section present Canada's trade according to two alternative classifications other than the classification by component material used in Section 4. A third classification—by group and degree of manufacture according to origin—will appear in the Canada Year Book 1962.

16.—Domestic Exports according to Degree of Manufacture, by Geographic Region and Leading Countries, 1958 and 1959

Region and Country	1958			1959		
	Raw Materials	Partly Manufactured	Fully or Chiefly Manufactured	Raw Materials	Partly Manufactured	Fully or Chiefly Manufactured
	$'000	$'000	$'000	$'000	$'000	$'000
Western Europe[1]	**598,523**	**370,260**	**357,695**	**589,618**	**361,406**	**292,313**
United Kingdom	337,385	246,660	187,531	344,494	240,586	200,721
Austria	3,622	1,737	2,098	4,217	2,195	1,848
Belgium and Luxembourg	31,634	10,422	27,475	27,465	18,367	10,295
Denmark	985	783	3,091	688	1,358	3,404
France	9,275	20,392	15,021	7,778	23,512	11,867
Germany, Federal Republic	72,396	44,264	566,526	74,689	37,412	17,243
Ireland	4,862	1,572	2,256	3,802	1,827	2,528
Italy	6,848	16,446	6,424	13,876	9,906	7,936
Netherlands	52,975	13,107	8,639	34,975	8,453	10,421
Norway	52,202	1,075	2,572	56,067	1,101	5,139
Spain	67	3,640	2,968	40	2,785	3,344
Sweden	1,789	4,731	4,346	2,703	7,055	5,121
Switzerland	20,913	4,087	4,243	13,233	5,048	7,447
Eastern Europe[1]	**17,268**	**788**	**4,531**	**27,642**	**8,661**	**1,953**
Czechoslovakia	147	365	830	1,297	3,266	374
Poland	7	36	517	14,928	503	200
Union of Soviet Socialist Republics	16,682	—	2,181	10,819	1,207	611
Middle East[1]	**3,981**	**1,955**	**9,003**	**9,516**	**2,300**	**9,808**
Israel	2,508	726	1,267	2,672	782	1,102

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[1] Includes other countries not specified.

16.—Domestic Exports according to Degree of Manufacture, by Geographic Region and Leading Countries, 1958 and 1959—concluded

Region and Country	1958			1959		
	Raw Materials	Partly Manufactured	Fully or Chiefly Manufactured	Raw Materials	Partly Manufactured	Fully or Chiefly Manufactured
	$'000	$'000	$'000	$'000	$'000	$'000
Other Africa[1]	**2,003**	**14,142**	**47,770**	**18,456**	**11,915**	**38,507**
Union of South Africa	292	11,888	37,780	16,006	9,516	25,721
Other Asia[1]	**140,265**	**26,145**	**78,812**	**130,979**	**53,448**	**75,344**
Ceylon	14	164	5,281	17	276	4,638
Hong Kong	545	1,419	4,064	671	4,525	5,997
India	40,103	14,092	24,799	17,095	16,570	19,988
Pakistan	5,115	173	10,023	7,610	2,409	7,298
Japan	86,454	6,839	11,560	102,672	23,883	13,169
Korea	159	1,375	2,148	19	2,109	3,873
Philippines	705	710	12,662	2,239	1,850	10,774
Oceania[1]	**3,277**	**23,807**	**41,808**	**807**	**21,953**	**45,605**
Australia	3,189	20,419	28,954	618	19,246	34,065
New Zealand	88	2,638	12,282	186	2,183	10,937
South America[1]	**16,837**	**16,533**	**77,089**	**24,054**	**21,357**	**68,362**
British Guiana	882	129	3,003	866	112	3,415
Argentina	121	227	6,080	131	3,013	3,858
Brazil	297	6,728	14,063	243	4,984	8,921
Chile	21	2,305	2,240	27	2,770	3,430
Colombia	727	2,901	10,185	1,904	4,006	11,759
Peru	3,333	1,688	6,420	5,856	1,413	4,362
Venezuela	9,698	2,120	31,662	12,067	4,245	29,520
Central America and Antilles[1]	**7,945**	**19,460**	**101,889**	**7,600**	**14,318**	**101,042**
West Indies Federation	4,370	2,252	28,921	4,392	2,084	33,238
Cuba	356	1,893	15,300	381	2,067	12,773
Dominican Republic	136	336	4,863	269	217	4,652
Mexico	516	8,877	22,036	905	3,796	22,932
Puerto Rico	1,269	4,149	7,108	491	3,974	6,056
North America[1]	**909,346**	**845,405**	**1,054,899**	**898,466**	**958,542**	**1,227,700**
United States[2]	908,841	845,344	1,053,882	897,995	958,464	1,226,692
Totals, Domestic Exports	**1,699,446**	**1,318,494**	**1,773,496**	**1,707,137**	**1,453,901**	**1,860,634**

[1] Includes other countries not specified. [2] Includes Hawaii and Alaska.

17.—Imports according to Degree of Manufacture, by Geographic Region and Leading Countries, 1958 and 1959

Region and Country	1958			1959		
	Raw Materials	Partly Manufactured	Fully or Chiefly Manufactured	Raw Materials	Partly Manufactured	Fully or Chiefly Manufactured
	$'000	$'000	$'000	$'000	$'000	$'000
Western Europe[1]	**24,392**	**45,697**	**753,357**	**27,481**	**49,443**	**877,820**
United Kingdom	11,915	33,289	473,301	12,369	34,843	541,360
Austria	1	56	4,583	9	74	5,624
Belgium and Luxembourg	607	2,365	32,787	813	2,502	41,471
Denmark	1,731	21	5,649	2,201	15	7,011
France	2,137	1,410	36,460	3,129	2,011	51,800
Germany, Federal Republic	375	1,109	101,160	456	1,902	121,546
Italy	1,117	1,871	29,162	2,510	2,283	32,863
Netherlands	4,256	2,307	20,342	3,469	1,711	23,975
Norway	315	291	2,500	389	984	2,689
Spain	618	2,512	3,551	264	2,153	3,210
Sweden	915	192	12,832	973	632	16,471
Switzerland	63	10	26,418	21	3	24,490

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[1] Includes other countries not specified.

17.—Imports according to Degree of Manufacture, by Geographic Region and Leading Countries, 1958 and 1959—concluded

Region and Country	1958			1959		
	Raw Materials	Partly Manufactured	Fully or Chiefly Manufactured	Raw Materials	Partly Manufactured	Fully or Chiefly Manufactured
	$'000	$'000	$'000	$'000	$'000	$'000
Eastern Europe[1]	**1,548**	**679**	**7,958**	**1,318**	**907**	**9,865**
Czechoslovakia	6	[2]	4,902	17	—	6,423
Middle East[1]	**69,869**	**165**	**3,227**	**83,353**	**223**	**4,710**
Iran	265	1	649	10,938	[2]	1,010
Saudi Arabia	68,021	—	—	70,329	—	396
Other Africa[1]	**15,893**	**7,915**	**4,146**	**15,594**	**11,242**	**4,442**
Ghana	1,927	194	1	3,840	261	2
Kenya	3,789	—	1,268	2,894	2	1,364
Mauritius and Dependencies	1	5,917	—	4	7,580	[2]
Union of South Africa	4,529	1,114	2,271	1,805	2,147	2,612
Other Asia[1]	**23,534**	**13,417**	**111,471**	**35,208**	**16,515**	**146,423**
Ceylon	2,226	1,208	9,429	2,772	3,295	9,065
Hong Kong	886	95	7,708	878	148	11,943
India	1,031	328	26,296	3,100	226	25,894
Malaya and Singapore	13,259	5,691	913	22,263	5,574	807
China, Communist	2,173	120	3,077	1,229	44	3,567
Japan	2,056	4,597	63,439	3,018	6,000	93,652
Oceania[1]	**12,910**	**23,353**	**13,919**	**15,051**	**23,561**	**15,985**
Australia	4,783	14,203	13,769	8,949	16,315	15,815
Fiji	—	5,727	—	1	4,762	2
New Zealand	8,127	3,262	151	5,943	2,484	167
South America[1]	**262,043**	**10,101**	**19,050**	**252,142**	**9,117**	**25,953**
British Guiana	9,361	9,358	1,908	8,731	7,687	1,615
Brazil	23,485	396	3,538	24,146	197	4,137
Colombia	16,274	142	158	15,245	391	192
Ecuador	4,933	8	21	7,590	20	12
Venezuela	200,663	—	8,875	188,083	1	16,499
Central America and Antilles[1]	**85,201**	**26,752**	**53,722**	**85,954**	**22,955**	**64,512**
West Indies Federation	24,919	11,533	6,342	27,899	15,851	6,691
Costa Rica	7,115	—	12	4,799	—	11
Cuba	1,704	14,206	2,926	1,021	5,731	5,259
Mexico	28,425	529	2,934	30,939	1,182	2,079
Netherlands Antilles	40	—	39,413	261	—	46,859
Panama	7,459	1	18	8,887	2	8,889
North America[1]	**409,280**	**123,504**	**2,927,390**	**419,062**	**177,910**	**3,112,173**
United States[3]	409,278	123,504	2,927,365	419,062	177,910	3,112,093
Totals, Imports	**904,670**	**251,583**	**3,894,239**	**935,163**	**311,875**	**4,261,883**

[1] Includes other countries not specified. [2] Less than $500. [3] Includes Hawaii and Alaska.

18.—Domestic Exports according to Purpose, by Group, 1958 and 1959

Group and Purpose	1958			1959		
	All Countries	United Kingdom	United States[1]	All Countries	United Kingdom	United States
	$'000	$'000	$'000	$'000	$'000	$'000
Producers' Materials	**3,587,501**	**646,996**	**2,152,828**	**3,897,312**	**668,096**	**2,406,340**
Farm Materials—						
Fodders	129,890	59,219	48,524	118,238	56,219	40,516
Fertilizers	47,461	—	41,071	49,443	285	41,183
Seeds	18,211	2,818	10,191	18,026	1,817	9,858
Other	1,102	[2]	1,074	723	—	707
Totals, Farm Materials	196,663	62,037	100,860	186,429	58,321	92,264

[1] Revised to include Hawaii and Alaska. [2] Less than $500.

18.—Domestic Exports according to Purpose, by Group, 1958 and 1959—concluded

Group and Purpose	1958			1959		
	All Countries	United Kingdom	United States[1]	All Countries	United Kingdom	United States
	$'000	$'000	$'000	$'000	$'000	$'000
Producers' Materials—concluded						
Manufacturers' Materials—						
Foods and beverages	448,995	150,703	18,137	446,469	148,215	17,494
Tobacco, smokers' supplies	18,571	14,396	14	25,162	19,972	298
Textiles, clothing, cordage	8,305	2,323	1,584	11,236	1,176	3,185
Fur and leather goods	47,881	8,223	28,398	51,717	7,868	31,855
Sawmills	3,861	1,105	1,548	3,096	753	1,601
Rubber industries	279	—	275	378	8	365
Other manufactures	2,501,489	368,471	1,737,330	2,773,733	402,252	1,927,948
Totals, Manufacturers' Materials	3,029,381	545,221	1,787,285	3,311,791	580,246	1,982,746
Building and Construction Materials	359,183	39,714	263,644	395,844	29,490	329,327
Other Producers' Materials	2,273	24	1,038	3,247	39	2,003
Producers' Equipment	**269,000**	**9,851**	**176,002**	**305,782**	**7,074**	**218,320**
Farm	118,452	414	108,923	137,604	420	130,700
Commerce and industry	150,548	9,437	67,079	168,177	6,654	87,620
Fuel, Electricity and Lubricants	**46,497**	**2,709**	**40,916**	**49,199**	**1,447**	**44,285**
Fuel	33,607	2,709	28,327	35,044	1,447	30,309
Electricity	12,580	—	12,580	13,955	—	13,955
Lubricants	310	—	9	201	—	21
Transport	**175,906**	**12,001**	**24,173**	**87,604**	**11,890**	**36,703**
Road	45,352	479	7,252	48,817	904	14,317
Rail	2,370	—	1,020	1,607	—	809
Water	19,071	11,269	905	12,220	10,729	1,064
Aircraft	109,113	253	14,996	24,960	257	20,513
Auxiliary Materials for Commerce and Industry	**11,938**	**3,014**	**4,871**	**13,515**	**4,105**	**5,807**
Containers	11,804	3,013	4,870	13,392	4,104	5,805
Other	134	1	1	123	1	2
Consumer Goods	**468,203**	**68,805**	**266,459**	**468,025**	**69,572**	**257,636**
Foods	341,483	62,997	174,193	325,303	65,713	150,665
Beverages	75,756	533	69,496	84,083	476	77,432
Smokers' supplies	323	61	56	433	59	92
Clothing	5,396	358	2,860	7,140	370	4,303
Household goods	7,593	220	1,964	10,259	514	3,338
Jewellery, timepieces, etc.	1,107	3	115	1,251	14	107
Books, educational supplies, etc.	10,767	690	5,226	12,427	1,392	6,419
Recreational equipment, etc.	13,500	481	10,452	16,608	371	13,559
Medical supplies, etc.	11,916	3,396	2,069	9,633	519	1,637
Other	365	64	27	889	144	83
Munitions and War Stores, *n.o.p.*	**732**	**13**	**23**	**254**	**38**	**93**
Live Animals for Food	**86,522**	—	**86,427**	**42,164**	—	**42,101**
Unclassified	**145,137**	**28,187**	**56,370**	**157,818**	**23,580**	**71,865**
Totals, Domestic Exports	**4,791,436**	**771,576**	**2,808,068**	**5,021,672**	**785,802**	**3,083,151**

[1] Revised to include Hawaii and Alaska.

19.—Imports according to Purpose, by Group, 1958 and 1959

Group and Purpose	1958			1959		
	All Countries	United Kingdom	United States[1]	All Countries	United Kingdom	United States
	$'000	$'000	$'000	$'000	$'000	$'000
Producers' Materials	**1,603,934**	**175,824**	**925,096**	**1,708,898**	**182,526**	**958,215**
Farm Materials—						
Fodders	27,938	5	25,819	32,054	3	31,900
Fertilizers	13,573	247	11,444	13,387	178	11,734
Seeds	7,475	110	6,225	7,233	424	5,807
Other	14,040	1,023	11,070	16,859	1,409	12,771
Totals, Farm Materials	63,027	1,386	54,557	69,533	2,014	62,211
Manufacturers' Materials—						
Foods and beverages	10,941	358	3,655	10,569	362	3,782
Tobacco, smokers' supplies	3,850	134	2,382	3,294	7	2,358
Textile, clothing, cordage	267,515	58,006	140,722	282,171	61,812	136,839
Fur and leather goods	43,254	10,235	27,706	50,820	11,453	32,673
Sawmills	—	—	—	—	—	—
Rubber industries	33,901	639	17,633	55,864	1,070	28,801
Other manufactures	951,556	73,635	504,592	999,553	74,387	526,904
Totals, Manufacturers' Materials	1,311,017	143,007	696,690	1,402,271	149,091	731,358
Building and Construction Materials	227,179	31,355	171,290	234,296	31,406	162,068
Other Producers' Materials	2,711	76	2,558	2,799	15	2,579
Producers' Equipment	**1,077,165**	**102,686**	**907,310**	**1,235,512**	**127,136**	**1,035,936**
Farm	210,676	7,944	197,169	287,353	16,998	262,256
Commerce and industry	866,489	94,741	710,141	948,159	110,138	773,680
Fuel, Electricity and Lubricants	**213,237**	**1,129**	**163,777**	**221,291**	**1,875**	**154,113**
Fuel	199,579	1,064	150,224	206,161	1,801	139,086
Electricity	887	—	887	1,134	—	1,134
Lubricants	12,771	65	12,665	13,996	74	13,893
Transport	**628,104**	**104,077**	**479,038**	**724,908**	**137,098**	**520,588**
Road	455,808	66,546	346,858	578,561	101,218	414,205
Rail	13,657	673	12,727	11,931	480	11,186
Water	18,643	3,105	13,627	20,391	2,424	16,353
Aircraft	139,995	33,752	105,825	114,025	32,975	78,843
Auxiliary Materials for Commerce and Industry	**63,577**	**5,886**	**49,750**	**69,046**	**6,195**	**54,000**
Advertising material	8,695	529	7,723	9,047	560	7,959
Containers	42,734	5,018	30,411	45,534	5,312	32,104
Other	12,148	338	11,616	14,464	324	13,938
Consumer Goods	**1,076,112**	**99,680**	**600,143**	**1,125,085**	**104,513**	**621,734**
Foods	381,441	16,810	185,944	382,585	18,601	188,966
Beverages	142,090	13,482	43,775	135,285	14,319	42,775
Smokers' supplies	5,648	527	3,458	5,680	519	3,285
Clothing	68,996	17,999	23,596	88,579	19,187	24,477
Household goods	223,304	29,949	162,274	236,299	29,396	172,614
Jewellery, timepieces, etc.	30,694	2,526	8,411	31,925	2,624	8,745
Books, educational supplies, etc.	78,775	5,858	66,189	85,504	5,645	71,668
Recreational equipment, etc.	70,904	5,428	49,546	80,013	5,934	50,509
Medical supplies, etc.	55,541	5,057	44,892	58,540	6,285	45,530
Other	18,719	2,044	12,058	20,676	2,003	13,164
Munitions and War Stores, *n.o.p.*	**8,821**	**1,038**	**7,084**	**10,535**	**1,164**	**8,258**
Live Animals for Food	**774**	—	**771**	**8,163**	—	**8,163**
Unclassified	**378,769**	**28,187**	**327,180**	**405,483**	**28,067**	**348,058**
Totals, Imports	**5,050,492**	**518,505**	**3,460,147**	**5,508,921**	**588,573**	**3,709,065**

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[1] Revised to include Hawaii and Alaska.

Section 6.—Comparison of Value, Price and Volume of Foreign Trade

In recent years there has been a substantial increase in the value of Canada's exports and imports. Changes in the value of trade, however, are the joint product of changes in the volume of goods traded and in the prices at which transactions are conducted. To assess the significance of value changes, it is desirable to isolate the contributions made to them by the price and volume factors.

Special indexes of export and import prices have been developed to provide this information. These indexes are based chiefly on unit values (average prices) calculated from the trade statistics, supplemented by information on wholesale and retail prices. Price relatives are calculated for a sample of commodities representing the greater part of export and import trade, and these relatives are weighted by the percentage of 1948 trade represented by each commodity in the sample in obtaining group and total indexes. By dividing these price indexes into the trade values the effects of price change are removed from the values, or by dividing the price index into an index of values on the same time-base an index is obtained showing changes in the volume of trade from year to year.

The grouping of commodities used in these calculations differs slightly from that of the regular trade statistics, the changes being desirable to simplify the pricing problem. The chief differences are that the first two main groups of the trade statistics have been combined into one group, "agricultural and animal products", and that the sub-group "rubber and its products" has been transferred from this group to the "miscellaneous" group. The declared values of domestic exports and imports have been revised to cover the adjustment for "Special Transactions—Non-Trade". An explanation of that adjustment is contained in Part II of this Chapter, p. 967. Table **20** shows the revised values of trade adjusted for pricing purposes and the value, price and volume indexes of Canadian trade for 1957-60.

In the period covered by the table, the indexes of exports, for both value and volume, showed a steady rise. The domestic export price indexes dropped fractionally between 1957 and 1958 but recovered sufficiently between 1958 and 1959 to more than offset the previous decline. A fractional increase was also noticeable in 1960. The over-all import picture showed little change over the period under review except for the considerable decline of approximately 8 p.c. in both value and volume between 1957 and 1958. The index of import prices as a whole did not fluctuate significantly; a drop of 1.8 p.c. between 1958 and 1959 was almost compensated by a 1.5-p.c. rise in 1960.

20.—Declared Values, and Value, Price and Physical Volume Indexes of Foreign Trade, by Commodity Group, 1957-60

Commodity Group[1]	1957	1958	1959	1960
	DECLARED VALUES			
	$'000	$'000	$'000	$'000
Domestic Exports	**4,788,880**	**4,791,436**	**5,021,672**	**5,264,052**
Agricultural and animal products	1,124,543	1,275,150	1,212,381	1,142,428
Fibres and textiles	27,162	20,660	26,803	40,518
Wood products and paper	1,456,125	1,413,989	1,515,962	1,591,919
Iron and steel and products	549,641	450,572	574,453	605,960
Non-ferrous metals and products	981,742	1,023,607	1,114,784	1,222,476
Non-metallic minerals and products	357,287	250,351	294,235	339,569
Chemicals and fertilizer	195,303	197,051	201,729	237,687
Miscellaneous	97,077	160,056	81,324	83,495
Imports	**5,473,346**	**5,050,492**	**5,508,921**	**5,492,348**
Agricultural and animal products	705,432	716,314	733,062	737,710
Fibres and textiles	408,651	387,357	425,470	438,536
Wood products and paper	217,722	226,912	263,203	256,701
Iron and steel and products	2,122,967	1,844,480	2,086,064	2,046,248
Non-ferrous metals and products	495,540	442,795	479,231	476,633
Non-metallic minerals and products	771,763	676,000	698,138	663,850
Chemicals and fertilizer	299,718	297,212	334,455	346,972
Miscellaneous	451,552	459,423	489,299	525,698

For footnote, see end of table.

20.—Declared Values, and Value, Price and Physical Volume Indexes of Foreign Trade, by Commodity Group, 1957-60—concluded

Commodity Group[1]	1957	1958	1959	1960
	VALUE INDEXES (1948=100)			
Domestic Exports	**156.9**	**157.3**	**164.8**	**172.8**
Agricultural and animal products	107.6	122.0	116.1	109.4
Fibres and textiles	59.6	45.4	56.6	85.5
Wood products and paper	152.7	148.3	159.0	166.9
Iron and steel and products	151.5	124.2	158.3	167.0
Non-ferrous metals and products	247.9	262.2	285.6	313.2
Non-metallic minerals and products	376.4	263.8	310.0	357.8
Chemicals and fertilizer	244.6	246.8	252.7	297.7
Miscellaneous	131.6	217.0	110.9	113.9
Imports	**209.0**	**192.9**	**210.4**	**209.8**
Agricultural and animal products	175.0	177.7	182.2	183.4
Fibres and textiles	116.6	110.5	120.9	124.6
Wood products and paper	308.6	321.6	373.1	363.9
Iron and steel and products	271.0	235.4	266.3	261.2
Non-ferrous metals and products	316.8	283.1	307.2	305.6
Non-metallic minerals and products	127.9	112.1	115.7	110.0
Chemicals and fertilizer	247.1	245.0	275.7	286.1
Miscellaneous	348.1	354.2	377.4	405.5
	PRICE INDEXES (1948=100)			
Domestic Exports	**121.0**	**120.6**	**122.8**	**123.2**
Agricultural and animal products	95.7	96.6	99.8	99.6
Fibres and textiles	112.4	108.0	107.8	110.5
Wood products and paper	119.9	119.3	120.2	118.5
Iron and steel and products	151.5	157.1	161.7	162.8
Non-ferrous metals and products	153.9	143.6	145.6	150.6
Non-metallic minerals and products	159.6	165.3	165.0	165.3
Chemicals and fertilizer	113.3	114.5	114.8	115.3
Miscellaneous	128.9	128.8	128.9	133.9
Imports	**116.4**	**116.5**	**114.4**	**116.1**
Agricultural and animal products	104.0	100.3	91.3	91.1
Fibres and textiles	90.2	86.6	82.3	88.0
Wood products and paper	126.0	138.7	139.7	142.2
Iron and steel and products	138.1	143.1	144.2	146.5
Non-ferrous metals and products	131.3	132.8	135.1	138.3
Non-metallic minerals and products	108.5	106.5	101.8	99.1
Chemicals and fertilizer	110.9	112.7	110.9	111.9
Miscellaneous	113.2	106.9	116.3	125.7
	VOLUME INDEXES (1948=100)			
Domestic Exports	**129.7**	**130.4**	**134.2**	**140.3**
Agricultural and animal products	112.4	126.3	116.3	109.8
Fibres and textiles	53.0	42.0	52.5	77.4
Wood products and paper	127.4	124.3	132.3	140.8
Iron and steel and products	100.0	79.1	97.9	102.6
Non-ferrous metals and products	161.1	182.6	196.2	208.0
Non-metallic minerals and products	235.8	159.6	187.9	216.5
Chemicals and fertilizer	215.9	215.5	220.1	258.2
Miscellaneous	102.1	168.5	86.0	85.1
Imports	**179.6**	**165.6**	**183.9**	**180.7**
Agricultural and animal products	168.3	177.2	199.6	201.3
Fibres and textiles	129.3	127.6	146.9	141.6
Wood products and paper	244.9	231.9	267.1	255.9
Iron and steel and products	196.2	164.5	184.7	178.3
Non-ferrous metals and products	241.3	213.2	227.4	221.0
Non-metallic minerals and products	117.9	105.3	113.7	111.0
Chemicals and fertilizer	222.8	217.4	248.6	255.7
Miscellaneous	307.5	331.3	324.5	322.6

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[1] The groups, though classified by component material, differ slightly from conventional groups (see text, p. 1002).

PART III.—EXTERNAL TRANSACTIONS*

Section 1.—Canadian Balance of International Payments

Canada's total commercial and financial transactions with other countries are presented in summary form in statements of the Canadian balance of international payments. The current account statement, covering all current exchanges of goods and services, indicates the main categories of transactions giving rise to receipts from and expenditures abroad, and the extent to which these are out of balance. The capital account presents an analysis of the movements of short-term and long-term capital that have occurred during a comparable period.

Each year since 1950, with the exception of 1952, Canada's current expenditures abroad exceeded external current receipts. The current account deficits that resulted in this period of rapid Canadian development were financed by inflows of capital. Current account deficits have customarily been associated with periods of Canadian prosperity, and the rate of recent Canadian growth with the development of new resources has been once again an underlying element in the strength of Canadian demands for imported goods and services. High levels of investment at a time when defence expenditures were also very heavy, together with rising levels of consumption, contributed to the deficits. Until 1956 the deficits in recent years were not large in proportion to the high levels of total current transactions and capital inflows of a long-term type were large enough to finance the deficits in most periods. In 1956 and 1957, as the result of continuing high levels of investment and consumption, the deficits rose to unprecedented peaks of $1,366,000,000 and $1,455,000,000; at the same time, inflows of capital in long-term forms rose very sharply. The figure for 1958, reflecting some moderation of economic activity in Canada, was substantially smaller than in the preceding years but nevertheless amounted to $1,131,000,000. In 1959 it rose to $1,504,000,000 but in 1960 declined again to $1,217,000,000. Since 1956, capital inflows in long-term forms have fallen short of current account deficits.

Current Account Transactions.—The deficit of $1,217,000,000 on current account in 1960 was made up of deficits of $145,000,000 on merchandise account† and $1,072,000,000 from non-merchandise transactions. The merchandise deficit has varied widely and was as high as $728,000,000 in 1956, when it accounted for more than one-half of the total deficit. On the other hand, the deficit on non-merchandise transactions has risen with a persistence and significance characteristic of this type of transaction for some years past.

In recent years the relative importance of exports of materials for industry—in such broad areas as forest products, metals and minerals and chemicals and fertilizers—has been increasing or maintained, and the relative position of wheat and other grains has declined. In addition to newer products for export—such as iron ore, petroleum and uranium—there have been general increases in the productive capacity of more traditional staples like pulp and paper, nickel, aluminum and copper. Expansions in demand for industrial materials produced by leading primary industries were responsible for most of a gain of $250,000,000 in 1960 in merchandise exports, which reached $5,400,000,000. In general, imports have demonstrated much more flexibility than exports but the decline in imports to $5,545,000,000 in 1960 amounted to only $27,000,000; within the total, divergent changes in commodity imports occurred, usually characteristic of a period of hesitant economic activity. Fairly substantial declines in imports of farm implements and miscellaneous steel products, crude rubber and petroleum products were in part offset by gains in imports of varied commodities such as aircraft, automobiles, vegetables and cotton and products. Details of Canada's foreign trade are covered in Parts I and II of this Chapter.

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* Prepared in the Balance of Payments Section, International Trade Division, Dominion Bureau of Statistics. More detailed information is given in the annual publication *Canadian Balance of International Payments and International Investment Position* (Catalogue No. 67-201), and in *Quarterly Estimates of the Canadian Balance of International Payments* (Catalogue No. 67-001).

† The adjustments from commodity trade statistics to merchandise imports and exports for balance of payments purposes include some items covered elsewhere in the balance of payments, as well as other adjustments necessary to conform to international receipts and payments.

The 1960 deficit on non-merchandise transactions of $1,072,000,000 was over nine times as great as that in 1949 and more than twice as great as that for as recent a year as 1955. This rise was largely attributable to the continued rapid growth in Canada's indebtedness to other countries and to the high level of incomes spent by an enlarged population. Roughly one-half of this deficit in 1960 was directly related to Canada's indebtedness abroad and subject to the effects of continued growth, with total interest and dividend payments by Canadians to other countries reaching $669,000,000. Other forms of transfer of investment income added over $100,000,000 of related payments, and there were also large payments by Canadian subsidiaries to parent companies for services. Net payments of interest and dividends totalled $491,000,000 while the net payments on account of all the above groups of transactions which are related to foreign investment amounted to well over $600,000,000, apart from some hundreds of millions of dollars accruing to non-residents which were retained in Canada for further investment and are not included in the current account.

The travel account involves substantial net outlays and reflects high levels of income in Canada. In 1960 net expenditures amounted to $207,000,000. To these payments were added net deficits of $91,000,000 from freight and shipping transactions, $79,000,000 from inheritances and transfers by migrants, and very large net payments of $366,000,000 covering business services, miscellaneous income, government transactions, and personal remittances. Against these expenditures there was $162,000,000 available from new gold production.

The outstanding development in the bilateral pattern of Canada's current account in 1960 was the sharp reversal in the decline, which began in 1953, in the surplus with overseas countries. The re-emergence of a surplus of $139,000,000 following a deficit of $274,000,000 in 1959 restored the traditional pattern of the surplus with overseas countries, contributing to settle Canada's chronic current deficit with the United States. This replacement of a deficit with a surplus was wholly attributable to the improvement in the merchandise trade surplus with overseas countries, as the deficit on 'invisible' transactions continued to widen slightly in 1960. The current account surplus with the United Kingdom was augmented by $158,000,000, and the deficit with other overseas countries was reduced by $255,000,000. The current deficit with the United States of $1,356,000,000 was higher than for any year except 1956 and 1957.

Capital Movements.—In 1960, Canada again drew substantially on the resources, real and financial, of the remainder of the world. The inflow of capital for direct investment in foreign-controlled establishments during 1960 was placed at $690,000,000, over $100,000,000 above the largest figure previously recorded. Transactions in Canadian securities led to a further inflow of $246,000,000, down sharply from the $650,000,000 recorded in 1959. These two groups of transactions added $936,000,000 to Canadian external liabilities in long-term forms. On the long-term assets side, there were outflows of $85,000,000 for direct investment abroad and $20,000,000 for the acquisition of foreign stocks and bonds, but inflows of $32,000,000 from repayments on inter-governmental loans. Transactions in all long-term forms led to a net capital import of about $918,000,000 which was sufficient to finance about 75 p.c. of the current account deficit; the corresponding inflows of $1,089,000,000 in 1959 were equivalent to 72 p.c. of the larger deficit in that year. Including inflows from a reduction in official holdings of gold and foreign exchange, and from increased holdings of Canadian dollars by non-residents, all other capital movements in short-term forms led to a net capital inflow of $299,000,000 in 1960. In both 1959 and 1960 about 80 p.c. of the movement of capital in long-term forms was from the United States.

Inflows of capital for direct investment in foreign-controlled enterprises reasserted themselves in 1960 as the dominant element in the capital account of the Canadian balance of payments, as they were in most of the postwar years until 1956. These persistent and substantial receipts were directed particularly to resource development and associated industries and by far the largest part of the new capital went into the petroleum and natural gas industry, which has been one of the dynamic developments in the Canadian economy. Substantial amounts also went into other mining industries, particularly for the development of iron ore, and to various branches of manufacturing.

From 1956 to 1959 the inflow for direct investment was dwarfed by the inflow of portfolio capital. This arose in part from substantial sales of outstanding Canadian stocks as the non-resident investor added to his stake in Canadian growth. The largest factor, however, was the growing demand in the Canadian capital market, some of which was diverted to foreign capital markets through the sale to non-residents of new issues of Canadian bonds and debentures. Corporation, provincial governments and municipalities were all important borrowers abroad.

During this period of large deficits on current account there was a tendency for a declining proportion to be financed by foreign direct and portfolio investments in Canadian establishments, and larger parts by increases in the net external debt of Canadian governments—federal, provincial and municipal—and in other net external liabilities, mainly short-term. However, in 1960 foreign direct and portfolio investment in Canadian establishments increased moderately both in total and relative to the total capital movement. The amount of the deficit financed by increases in the net external debt of Canadian governments fell sharply.

Comments and statistics on the effects of the unprecedented capital inflows of recent years upon the ownership of investments in Canada will be found in the Section on Canada's International Investment Position in Chapter XXII.

1.—Current Account Transactions between Canada and All Countries, 1941-60

(Millions of dollars)

Year	Current Receipts[1]	Current Payments[2]	Net Balance including Mutual Aid Exports	Wartime Grants and Mutual Aid	Net Balance on Current Account indicating Net Movement of Capital
1941	2,458	1,967	+491	—	+491
1942	3,376	2,275	+1,101	−1,002	+99
1943	4,064	2,858	+1,206	−518	+688
1944	4,557	3,539	+1,018	−960	+58
1945	4,456	2,910	+1,546	−858	+688
1946	3,365	2,905	+460	−97	+363
1947	3,748	3,699	+49	—	+49
1948	4,147	3,696	+451	—	+451
1949	4,089	3,912	+177	—	+177
1950	4,297	4,574	−277	−57	−334
1951	5,311	5,683	−372	−145	−517
1952	5,858	5,494	+364	−200	+164
1953	5,737	5,934	−197	−246	−443
1954	5,520	5,668	−148	−284	−432
1955	6,072	6,548	−476	−222	−698
1956	6,621	7,830	−1,209	−157	−1,366
1957	6,622	7,970	−1,348	−107	−1,455
1958	6,579	7,568	−989	−142	−1,131
1959	6,855	8,296	−1,441	−63	−1,504
1960p	7,167	8,341	−1,174	−43	−1,217

[1] Includes Mutual Aid exports.

[2] Excludes Mutual Aid offsets.

2.—Geographical Distribution of the Balance on Current Account between Canada and Other Countries, 1941-60

NOTE.—In the years 1942–46 balances include exports of currently produced goods provided as Mutual Aid or Official Contributions. (See also Table **1**.)

(Millions of Canadian dollars)

Year	United States[1]	United Kingdom[2]	Other Overseas Countries	All Countries	Year	United States[1]	United Kingdom[2]	Other Overseas Countries	All Countries
1941	−318	+734	+75	+491	1951	−951	+223	+211	−517
1942	−180	+1,223	+58	+1,101	1952	−849	+388	+625	+164
1943	−19	+1,149	+76	+1,206	1953	−904	+133	+328	−443
1944	+31	+746	+241	+1,018	1954	−807	+229	+146	−432
1945	+36	+747	+763	+1,546	1955	−1,035	+330	+7	−698
1946	−607	+500	+567	+460	1956	−1,639	+252	+21	−1,366
1947	−1,134	+633	+550	+49	1957	−1,579	+118	+6	−1,455
1948	−393	+486	+358	+451	1958	−1,176	+104	−59	−1,131
1949	−601	+446	+332	+177	1959	−1,230	+13	−287	−1,504
1950	−400	+24	+42	−334	1960p	−1,356	+171	−32	−1,217

[1] Includes all net exports of non-monetary gold. [2] Excludes wheat exports diverted to other overseas countries.

3.—Balance of International Payments between Canada and All Countries, 1954-60

(Millions of dollars)

Item	1954	1955	1956	1957	1958	1959	1960p
A. CURRENT RECEIPTS—							
Merchandise exports (adjusted)	3,929	4,332	4,837	4,894	4,887	5,150	5,400
Mutual Aid to NATO countries	284	222	157	107	142	63	43
Gold production available for export	155	155	150	147	160	148	162
Tourist and travel expenditure	305	328	337	363	349	391	420
Interest and dividends	147	160	142	154	168	182	178
Freight and shipping	313	398	457	445	401	420	442
All other current credits	387	477	541	512	472	501	522
TOTALS, CURRENT RECEIPTS	5,520	6,072	6,621	6,622	6,579	6,855	7,167
B. CURRENT PAYMENTS—							
Merchandise imports (adjusted)	3,916	4,543	5,565	5,488	5,066	5,572	5,545
Tourist and travel expenditure	389	449	498	525	542	598	627
Interest and dividends	423	483	523	589	612	671	669
Freight and shipping	356	415	502	515	460	525	533
Official contributions[1]	295	246	187	147	195	135	103
All other current debits	573	634	712	813	835	858	907
TOTALS, CURRENT PAYMENTS	5,952	6,770	7,987	8,077	7,710	8,359	8,384
Balance on merchandise trade	+13	−211	−728	−594	−179	−422	−145
Balance on other transactions	−445	−487	−638	−861	−952	−1,082	−1,072
C. CURRENT ACCOUNT BALANCE	−432	−698	−1,366	−1,455	−1,131	−1,504	−1,217
D. CAPITAL ACCOUNT—							
Direct Investment—							
Direct investment in Canada	+392	+417	+583	+514	+420	+550	+690
Direct investment abroad	−81	−74	−104	−68	−48	−80	−85
Canadian Securities—							
Trade in outstanding issues	+63	−27	+199	+92	+88	+201	+52
New issues	+331	+166	+667	+798	+677	+707	+447
Retirements	−203	−184	−141	−133	−158	−258	−253
Foreign security transactions	−24	−6	+2	+6	+3	−33	−20
Repayments on Government of Canada war and postwar loans	+72	+69	+69	+50	+30	+33	+32
Subscriptions in gold and U.S. dollars to IBRD, IFC and IMF	—	—	−4	—	—	−59	−3
Change in Canadian dollar holdings of foreigners	+34	+89	−24	−35	+106	+13	+120
Change in official holdings of gold and foreign exchange (increase, minus)	−124	+44	−33	+105	−109	+70	+39
Other capital movements[2]	−28	+204	+152	+126	+122	+360	+198
E. NET CAPITAL MOVEMENT	+432	+698	+1,366	+1,455	+1,131	+1,504	+1,217

[1] Includes Mutual Aid to NATO countries. [2] Includes unrecorded capital movements, and errors and omissions.

4.—Current and Capital Account Transactions between Canada and the United States, 1954-60

(Millions of dollars)

Item	1954	1955	1956	1957	1958	1959	1960^{p}
A. CURRENT RECEIPTS—							
Merchandise exports (adjusted)	2,355	2,598	2,854	2,931	2,908	3,191	3,039
Net exports of non-monetary gold	155	155	150	147	160	148	162
Travel expenditure	283	303	309	325	309	351	375
Interest and dividends	69	78	80	95	100	99	105
Freight and shipping	169	203	223	222	206	228	220
All other current receipts	275	363	399	350	327	363	380
TOTALS, CURRENT RECEIPTS	3,306	3,700	4,015	4,070	4,010	4,380	4,281
B. CURRENT PAYMENTS—							
Merchandise imports (adjusted)	2,800	3,283	4,021	3,878	3,443	3,727	3,715
Travel expenditure	320	363	391	403	413	448	462
Interest and dividends	345	388	427	480	500	547	548
Freight and shipping	261	287	351	351	294	326	324
All other current payments	387	414	464	537	536	562	588
TOTALS, CURRENT PAYMENTS	4,113	4,735	5,654	5,649	5,186	5,610	5,637
C. CURRENT ACCOUNT BALANCE	−807	−1,035	−1,639	−1,579	−1,176	−1,230	−1,356
D. CAPITAL ACCOUNT—							
Direct Investment—							
Direct investment in Canada	+288	+306	+406	+390	+303	+424	+482
Direct investment abroad	−46	−56	−70	−35	−3	−7	−48
Canadian Securities—							
Trade in outstanding issues	—	−67	+34	−65	−60	+94	+45
New issues	+299	+127	+601	+722	+600	+622	+381
Retirements	−184	−169	−133	−105	−132	−211	−200
Foreign security transactions	+4	+25	−3	+9	+2	−36	+3
Subscriptions in gold and U.S. dollars to IBRD, IFC and IMF	—	—	—	—	—	−59	−3
Change in Canadian dollar holdings of foreigners	+19	+66	−48	−10	+83	+8	+60
Change in official holdings of gold and foreign exchange (increase, minus)	−121	+42	−34	+104	−108	+67	+39
Other capital movements[1]	+18	+151	+103	+58	+147	+447	+221
E. NET CAPITAL MOVEMENT	+277	+425	+856	+1,068	+952	+1,349	+980
F. BALANCE SETTLED BY EXCHANGE TRANSFERS	+530	+610	+783	+511	+224	−119	+376
TOTALS, FINANCING OF CURRENT ACCOUNT BALANCE	+807	+1,035	+1,639	+1,579	+1,176	+1,230	+1,356

[1] Includes unrecorded capital movements, and errors and omissions.

5.—Current Account Transactions between Canada and the United Kingdom, 1954-60

(Millions of dollars)

Item	1954	1955	1956	1957	1958	1959	1960^{p}
A. CURRENT RECEIPTS—							
Merchandise exports (adjusted)	660	772	818	734	766	781	924
Travel expenditure	13	13	14	18	18	18	20
Interest and dividends	35	41	14	10	32	35	34
Freight and shipping	73	97	98	95	84	80	93
All other current receipts	55	59	71	81	60	69	76
TOTALS, CURRENT RECEIPTS	836	982	1,015	938	960	983	1,147
B. CURRENT PAYMENTS—							
Merchandise imports (adjusted)	391	406	493	520	537	618	611
Travel expenditure	35	40	46	47	52	62	70
Interest and dividends	62	75	73	78	76	90	81
Freight and shipping	39	49	59	69	70	85	89
All other current payments	80	82	92	106	121	115	125
TOTALS, CURRENT PAYMENTS	607	652	763	820	856	970	976
C. CURRENT ACCOUNT BALANCE	+229	+330	+252	+118	+104	+13	+171

Section 2.—Travel between Canada and Other Countries

The volume of travel between Canada and other countries continued to expand during 1960 when visits to and from the country numbered close to 59,000,000, an increase of between 1 p.c. and 2 p.c. over the 1959 record level. Despite the fact that entries of United States residents, which reached 29,700,000, were down almost 1 p.c., total travel to Canada advanced slightly as a result of a 15-p.c. rise in arrivals from overseas countries. Canadian travel abroad in 1960 also expanded. Visits to the United States numbered 29,100,000, an increase of nearly 4 p.c., while trips overseas were 20 p.c. more numerous than in 1959.

Preliminary estimates indicate that expenditures involved in travel between Canada and other countries attained a new high of $1,047,000,000 in 1960, some 6 p.c. above the 1959 figure. Receipts for the year totalled $420,000,000, a gain of $29,000,000 or approximately 7 p.c. Residents of the United States accounted for $24,000,000 of the increase as they spent $375,000,000 on travel in Canada, a 7-p.c. gain over 1959. At the same time, receipts from residents of countries other than the United States advanced 13 p.c. to a record level of $45,000,000. Preliminary figures also show that expenditures of Canadians travelling abroad in 1960 were the highest on record. Total expenditures reached $627,000,000, an increase of $29,000,000 or nearly 5 p.c. over 1959. Expenditures in the United States, which amounted to $462,000,000, accounted for $14,000,000 of the increase and payments for overseas travel gained $15,000,000 or 10 p.c., rising to a record $165,000,000.

Thus, in comparison with 1959, the 1960 deficit on travel account with the United States fell $10,000,000 to $87,000,000 while the debit balance with overseas countries rose $10,000,000 to $120,000,000 and the net debit balance with all countries remained unchanged at $207,000,000.

Only the above summary figures, subject to revision, were available for 1960 at the time of writing; detailed information for 1959 is given in the following text and table.

Residents of other countries who visited Canada during 1959 numbered 29,922,400, an increase of 1,353,300 or about 5 p.c. more visits than in 1958. The total comprised 29,880,800 entries by residents of the United States and 41,600 travellers entering direct from other countries, increases of around 5 p.c. and 8 p.c., respectively. In 1959, Canadians who returned from trips outside Canada numbered 28,146,700, an increase of 592,900 or some 2 p.c. over the previous year. The majority, about 27,989,900, had been to the United States and 156,800 returned direct from overseas. Trips to the United States advanced approximately 2 p.c. while visits overseas were nearly 19 p.c. greater than in 1958.

Total receipts from non-resident travel in Canada during 1959 amounted to $391,100,000, an increase of almost 12 p.c. over the 1958 total. Residents of the United States accounted for $351,100,000 and all of the increase of $41,700,000, as receipts from other travellers remained unchanged at $40,000,000. Total expenditures of Canadians travelling to other countries in 1959 were $598,400,000, a gain of $56,100,000 or just over 10 p.c. over the previous year. Payments on account with the United States were $448,400,000, a gain of between 8 p.c. and 9 p.c., while expenditures connected with travel overseas totalled $150,000,000, an increase of slightly more than 16 p.c. Thus, the 1959 debit balance on travel account with all countries amounted to $207,300,000, advancing $14,400,000 or between 7 p.c. and 8 p.c. above the 1958 figure.

6.—Number and Expenditure of Foreign Travellers in Canada and Canadian Travellers Abroad, 1958 and 1959

Year and Class of Traveller	Foreign Travellers in Canada[1]	Foreign Expenditure in Canada	Canadians Travelling Abroad[1]	Canadian Expenditure Abroad	Excess of Foreign Travellers in Canada[1]	Excess of Canadian Expenditure Abroad
	No.	$'000	No.	$'000	No.	$'000
1958						
Travellers from and to overseas countries	38,400^{r}	40,000	132,100^{r}	129,000	−93,700^{r}	+89,000
Travellers from and to the United States—						
Automobile—						
Short-term visit (under 48 hrs.)	19,562,200	51,500	19,010,900	42,300	+551,300	−9,200
Long-term visit	3,099,700	120,200	3,173,500	173,300	−73,800	+53,100
Rail	651,000	34,700	405,400	56,500	+245,600	+21,800
Boat	331,900	15,100	116,500	6,500	+215,400	−8,600
Bus (exclusive of local bus)	369,900	26,300	435,100	42,300	−65,200	+16,000
Aircraft	368,100	41,500	361,100	78,100	+7,000	+36,600
Other (pedestrians, local bus, etc.)	4,147,900	20,100	3,919,200	14,300	+228,700	−5,800
Totals, United States	28,530,700	309,400	27,421,700	413,300	+1,109,000	+103,900
Totals, All Countries	**28,569,100^{r}**	**349,400**	**27,553,800^{r}**	**542,300**	**+1,015,300^{r}**	**+192,900**
1959						
Travellers from and to overseas countries	41,600	40,000	156,800	150,000	−115,200	+110,000
Travellers from and to the United States—						
Automobile—						
Short-term visit (under 48 hrs.)	19,550,000	59,200	18,888,000	44,100	+662,000	−15,100
Long-term visit	3,281,200	132,600	3,316,800	191,000	−35,600	+58,400
Rail	619,100	35,900	380,500	53,900	+238,600	+18,000
Boat	419,400	21,000	124,400	5,600	+295,000	−15,400
Bus (exclusive of local bus)	392,200	26,900	436,700	46,100	−44,500	+19,200
Aircraft	431,300	50,700	422,600	86,900	+8,700	+36,200
Other (pedestrians, local bus, etc.)	5,187,600	24,800	4,420,900	20,800	+766,700	−4,000
Totals, United States	29,880,800	351,100	27,989,900	448,400	+1,890,900	+97,300
Totals, All Countries	**29,922,400**	**391,100**	**28,146,700**	**598,400**	**+1,775,700**	**+207,300**

[1] As these figures are the number of entries and re-entries into Canada, they include substantial amounts of in-transit, commuting and local traffic.

Travel between Canada and the United States.—In 1959, short-term visits again amounted to just over 84 p.c. of the total volume but, because of the low average expenditures involved, receipts from this category once more represented only about 24 p.c. of the total amount received from United States visitors to Canada. On the other hand, non-residents remaining in Canada 48 hours or more, although constituting only 16 p.c. of the total visits, contributed more than 76 p.c. of the receipts. Nearly 77 p.c. of all United States visitors entered Canada by automobile and these travellers accounted for about 55 p.c. of the total receipts. However, volume and expenditures varied considerably according to the length of stay. For example, motorists remaining in Canada less than 48 hours made up 65 p.c. of all visits but only 17 p.c. of the receipts, while those in Canada for a longer period constituted 11 p.c. of the total traffic and accounted for 38 p.c. of the receipts. Thus, from an international transactions point of view, the most important group of visitors to Canada are those who arrive by car and remain two or more days. In 1959, the largest proportion of these motorists, some 19 p.c., originated in the State of New York. Other leading States of origin were Michigan with 13 p.c., Ohio with 9 p.c. and Washington and Pennsylvania each with 7 p.c. Furthermore, automobiles from the State of New York accounted for 25 p.c. of the long-term entries through ports in

Ontario, and 27 p.c. in Quebec. Michigan was the State of origin for 21 p.c. of Ontario's long-term motorists and Massachusetts provided 28 p.c. of the entries into the Atlantic Provinces. Over one-half of the motorists remaining 48 hours or more in British Columbia originated in the State of Washington, while 22 p.c. came from California. The majority of long-term automobile entries in the Prairie Provinces were from the States immediately south of the border—Montana, North Dakota and Minnesota. All non-automobile forms of travel, with the exception of rail, carried more United States visitors to Canada in 1959 than in 1958. Receipts from such traffic were also higher; visitors arriving by aircraft accounted for nearly 38 p.c. of the total.

The number of Canadians returning from trips to the United States in 1959 was about 568,200 higher than in 1958 and Canadian travel expenditures in that country were consequently up by $35,100,000. Close to 67 p.c. of the increased volume was in short-term visits lasting less than 48 hours but over 76 p.c. of the increase in expenditures was in the category of long-term traffic outside Canada (48 hours or more). Canadian purchases in the United States declared under the $100 customs exemption at $73,000,000 were $1,000,000 lower than in 1958, continuing the trend in evidence in recent years of a dwindling proportion of expenditures being spent on the purchase of merchandise.

Almost 64 p.c. of the Canadian visitors to the United States in 1959 were motorists who remained 24 hours or fewer and who accounted for only 7 p.c. of the expenditures. Conversely, motorists remaining 48 hours or more represented just 12 p.c. of the volume but nearly 43 p.c. of the expenditures. There were altogether 22,204,800 re-entries by automobile in 1959, a slight increase over 1958.

The number of Canadians returning from the United States other than by automobile was 5,785,100 in 1959 and their expenditures amounted to $213,300,000. About 44 p.c. of the over-all increase in Canadian expenditures in the United States was attributable to this travel category. More residents returned by bus (exclusive of local bus) than by any other form of non-automobile transportation, but the highest expenditures were recorded by persons travelling by air. Air travel between Canada and the United States has shown a fairly constant growth in recent years while a certain amount of irregularity has appeared in the pattern of other types of non-automobile travel.

Particulars of Canadian travel behaviour in the United States were ascertained, as in previous years, through a mail questionnaire distributed to a selected group of travellers. Data obtained through this survey pertain mainly to the long-term category of traffic. Returns from the 1959 survey indicated recreation as the most popular reason for entering the United States, accounting for 45 p.c. of all visits, about 5 p.c. more than in 1958. Visiting friends or relatives accounted for 28 p.c., shopping trips for 15 p.c., business for 8 p.c., health 3 p.c. and other reasons 1 p.c. Less than 1 p.c. of the travellers went across the border for purposes of formal study. Certain seasonal trends are always apparent; business and shopping trips reached their peaks in the second or fourth quarters of the year and recreation during the third quarter when trips to the United States for reasons of health were at a minimum.

Survey data suggested that the Canadians travelling to the United States for formal study remained, on the average, nearly three months and spent $633. Lower averages were recorded by the shopper, who spent $74 during a three-day stay, a period of time closely related to the 48 hour minimum stay required for the $100 customs exemption. The recreation-bound visitor remained, on the average, 10 days and spent $138. According to the survey, the States most frequently visited by Canadian travellers were New York which attracted 27 p.c., Washington 11 p.c., Florida 10 p.c., Michigan 9 p.c. and California 6 p.c. Generally, the destination of the Canadian traveller lay in the State or States immediately south of the province in which he resided.

7.—Summary of Highway Traffic at Canadian Border Points, by Province, 1958 and 1959

Province or Territory	Foreign Vehicles Inward					
	Non-permit Class Local Traffic		Travellers' Vehicle Permits		Commercial Vehicles	
	1958	1959[1]	1958	1959	1958	1959
	No.	No.	No.	No.	No.	No.
Atlantic Provinces	1,449,720	1,057,413	216,191	..	101,485	93,291
Quebec	575,956	444,746	407,214	..	96,256	100,858
Ontario	3,878,340	3,314,373	1,499,740	..	171,695	200,914
Manitoba	79,077	64,834	51,983	..	23,010	25,790
Saskatchewan	29,741	24,081	23,231	..	11,219	8,172
Alberta	22,809	16,862	46,788	..	8,711	8,062
British Columbia	130,909	105,708	292,768	..	40,641	40,523
Yukon Territory	337	402	9,476	..	83	615
Totals	**6,166,889**	**5,028,419**	**2,547,391**	..	**453,100**	**478,225**
	Canadian Vehicles Returning					
	After Stay of 24 Hours or Less		After Stay of Over 24 Hours		Commercial Vehicles	
	1958	1959	1958	1959	1958	1959
	No.	No.	No.	No.	No.	No.
Atlantic Provinces	1,671,214	1,717,825	149,265	167,829	115,691	118,302
Quebec	1,116,431	1,080,609	367,941	369,228	147,609	143,197
Ontario	3,019,548	2,999,515	471,324	510,873	218,691	255,144
Manitoba	141,089	143,471	73,387	79,138	26,559	32,469
Saskatchewan	82,622	78,496	31,911	32,202	8,037	8,476
Alberta	44,593	43,520	44,718	42,005	11,229	9,435
British Columbia	707,686	789,200	235,323	250,477	38,880	41,955
Yukon Territory	1,385	1,271	386	475	511	419
Totals	**6,784,568**	**6,853,907**	**1,374,255**	**1,452,227**	**567,207**	**609,397**

[1] January–September inclusive.

Travel between Canada and Overseas Countries.—In 1959, non-immigrants arriving in Canada direct from overseas numbered 41,600, an increase of 3,200 or 8 p.c. over arrivals in 1958. An additional 25,000 were estimated to have come to Canada via the United States, making a total of 66,600 visits.

Of the $40,000,000 in travel expenditures received from overseas residents, $21,000,000 went to Canadian carriers for transportation services and the remainder was spent within Canada. Canadian air and steamship lines carried about 39 p.c. of the non-resident visitors entering Canada direct in 1959. Some 57 p.c. of the overseas visitors came by air.

8.—Non-immigrant Visitors Entering Canada Direct from Overseas Countries, by Type of Transportation, 1958 and 1959

Country of Residence	Arrivals by Aircraft		Arrivals by Vessel		Totals	
	1958	1959	1958	1959	1958	1959
	No.	No.	No.	No.	No.	No.
United Kingdom	**10,236**	**11,784**	**11,680**	**11,267**	**21,916**	**23,051**
England	8,092	9,395	8,627	8,592	16,719	17,987
Scotland	1,724	1,922	2,230	1,950	3,954	3,872
Northern Ireland	244	284	456	414	700	698
Wales	151	148	319	258	470	406
Lesser British Isles	25	35	48	53	73	88
Other Commonwealth, *n.e.s.*	**2,910**	**2,885**	**1,289**	**1,357**	**4,199**	**4,242**
Australia	506	544	650	728	1,156	1,272
West Indies Federation	794	831	131	106	925	937
Bermuda	436	488	6	18	442	506

8.—Non-immigrant Visitors Entering Canada Direct from Overseas Countries, by Type of Transportation, 1958 and 1959—concluded

Country of Residence	Arrivals by Aircraft		Arrivals by Vessel		Totals	
	1958	1959	1958	1959	1958	1959
	No.	No.	No.	No.	No.	No.
Other Commonwealth, *n.e.s.*—concluded						
New Zealand	269	217	218	232	487	449
India	173	192	47	50	220	242
Union of South Africa	115	141	71	86	186	227
Hong Kong	340	188	11	9	351	197
Other	277	284	155	128	432	412
Europe, *n.e.s.*	**5,165**	**6,975**	**4,881**	**5,119**	**10,046**	**12,094**
Germany	1,215	1,573	1,269	1,454	2,484	3,027
Netherlands	911	1,283	1,492	1,636	2,403	2,919
France	1,203	1,340	689	578	1,892	1,918
Italy	159	305	116	236	275	541
Belgium	251	353	101	120	352	473
Switzerland	295	345	109	114	404	459
Austria	122	251	105	202	227	453
Poland	83	94	460	342	543	436
Denmark	141	298	98	93	239	391
Norway	116	240	72	76	188	316
Ireland	99	154	106	110	205	264
Sweden	97	195	26	35	123	230
Czechoslovakia	63	144	2	8	65	152
Union of Soviet Socialist Republics	79	115	1	1	80	116
Other	331	285	235	114	566	399
Other	**1,976**	**1,979**	**268**	**250**	**2,244**	**2,229**
Mexico	700	769	29	5	729	774
Japan	230	291	38	115	268	406
South America	374	313	66	29	440	342
Asia, *n.e.s.*	200	146	38	44	238	190
Africa, *n.e.s.*	90	112	33	27	123	139
Other	382	348	64	30	446	378
Totals	**20,287**	**23,623**	**18,118**	**17,993**	**38,405**	**41,616**
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Percentage of Totals—						
United Kingdom	50.5	49.9	64.5	62.6	57.1	55.4
Other Commonwealth	14.3	12.2	7.1	7.5	10.9	10.2
Europe, *n.e.s.*	25.5	29.5	26.9	28.5	26.2	29.0
Other	9.7	8.4	1.5	1.4	5.8	5.4

Visitors from the United Kingdom accounted for close to 56 p.c. of the direct entries, about 2 p.c. less than in 1958, and the proportion originating in other Commonwealth countries fell slightly to just over 10 p.c. Residents of other European countries made up 29 p.c. of the direct arrivals, or 3 p.c. more than in the previous year, and about 5 p.c. originated in areas not already specified.

Canadians returning direct from visits to overseas countries in 1959 advanced by 24,700 in comparison with the number returning during 1958. Expenditures also reached a new high at $123,000,000, an increase of $20,000,000 over 1958. It was estimated that $54,000,000 was spent on travel in the United Kingdom, $49,000,000 in other European areas, $9,000,000 in countries designated as "other British" and the remainder in countries not already specified. As in 1958, transportation costs to and from North America accounted for 47 p.c. of the 1959 expenditures by Canadians returning direct from overseas countries, but the proportion received by Canadian carriers, both air and vessel, was slightly lower at 39 p.c. Airlines received approximately 67 p.c. of overseas transportation charges, an increase of 6 p.c. over 1958. All major Canadian airports recorded increased traffic as 106,600 residents returned by aircraft, a gain of 28 p.c. over the 1958 total. Some 46,700 travellers returned direct by vessel, an increase of 2 p.c. over 1958.

Survey results also showed that the United Kingdom was visited by 59 of every 100 Canadians returning direct from overseas countries in 1959, 2 p.c. less than in 1958; 46 of every 100 visited one or more countries in Continental Europe, a decrease of 4 p.c. Both categories include persons reporting combined trips to the United Kingdom and other European countries (approximately 30 p.c.). The percentage of persons who reported trips to the West Indies Federation, Bermuda, and Hawaii remained fairly constant at 6 p.c., 5 p.c. and 4 p.c., respectively, and Mexico was specified as destination by 3 in every 100 travellers, a slight decrease compared with 1958. Again, 1 p.c. went to Central America and the non-British West Indies, and between 4 p.c. and 5 p.c. reported visits to several areas. Less than 1 p.c. visited each of the following areas: Australia and New Zealand, other Commonwealth, South America, and countries not already specified. Seasonal trends were again evident—a higher proportion of travellers went to the United Kingdom during the third quarter than at other times of the year; travel to more southerly destinations such as the West Indies Federation, Hawaii and Mexico was heaviest in the first quarter; and trips to Continental Europe were popular almost equally throughout the four quarters of the year.

Length of stay recorded by Canadians returning direct from overseas varied as to destination and type of transportation used. Visitors to the United Kingdom remained an average of about 44 days but the average length of stay for travellers returning from that country by air was just over 30 days, while boat travellers remained twice as long. Similarly, while the average stay of Canadians in Continental Europe was about 41 days, those returning by air and boat averaged 33 days and 53 days, respectively. These averages include persons who reported visits to both the United Kingdom and Continental Europe. Persons visiting the United Kingdom only remained an average of 52 days and those visiting Continental Europe only, 58 days. Combined trips to these two destinations lasted on the average 68 days, of which 35 days were spent in the United Kingdom. Generally, persons who returned by air and reported either separate or combined trips to these areas spent half as much time abroad as did those returning by vessel.

With few exceptions, the average length of stay in non-European areas, such as Bermuda, the West Indies Federation, Central America and the non-British West Indies, South America, Mexico and Hawaii, was shorter than that in European countries. Travel to these countries is usually by air and often involves shorter and more accessible travel routes. Many Canadians spend vacations of from one to three weeks in these southern areas while travel to European countries is often for the purpose of visiting friends or relatives, which tends to lengthen the stay.

A total of 46,000 Canadians were estimated to have returned from overseas countries via the United States in 1959, some 10 p.c. more than in 1958. In the first quarter of the year, about 43 p.c. of these travellers returned from visits to the West Indies Federation and Mexico, and in the second quarter 33 p.c. In the third and fourth quarters, approximately 55 p.c. and 38 p.c., respectively, returned after visits to Europe.

The deficit in the overseas travel account amounted to $110,000,000 in 1959, representing 53 p.c. of Canada's total travel deficit compared with 46 p.c. in 1958.

Tourist Information.—Tourist information generally is supplied by the Canadian Government Travel Bureau, Ottawa, and detailed information on the National Parks and Historic Sites is available from the Department of Northern Affairs and National Resources, Ottawa. For advice regarding specific provinces or particular cities or resorts, application should be made to the provincial or municipal Bureau of Information concerned.

PART IV.—THE GOVERNMENT AND FOREIGN TRADE

Section 1.—Foreign Trade Service and Associated Agencies concerned with the Development of Foreign Trade*

Foreign trade contributes substantially to the welfare and prosperity of Canadians, largely because the productive capacity of Canada is greater than the ability of its population to consume the output of farms, factories, forests, fisheries and mines. Every effort is made, therefore, to establish and maintain close commercial relations with other countries whose markets are essential to the Canadian economy It is appreciated, however, that two-way trade should be encouraged in order that goods and services may be accepted in partial payment for the products Canada is in a position to export. Furthermore, many commodities that are not indigenous to this country must be imported. Some of these are required for industrial processes and others may be classed as consumer goods necessary for the maintenance of the Canadian standard of living.

Although many private firms have established connections in other countries that enable them to maintain a steady flow of goods in either direction, others require the assistance of government agencies in finding markets or sources of supply. Import and export controls imposed by many countries for a variety of reasons, together with postwar foreign exchange difficulties, present problems that no single firm or even an association of manufacturers, exporters or importers can solve without assistance from government representatives.

The Department of Trade and Commerce and associated agencies are at the disposal of exporters and importers engaged directly in the development of Canada's commercial relations with other countries. Services obtainable from the various branches, divisions and agencies are described below.

Agriculture and Fisheries Branch.—The primary role of this Branch is to promote the sale of agricultural and fisheries products to overseas markets. It operates through three commodity divisions—the Grain Division, the Fisheries Division and the Food and Agriculture Division—each of which is staffed by specialists in its particular field. The Branch is in close touch with other government departments, both federal and provincial, and with all industry organizations representing producers and processors. It takes an active part in international meetings concerned with agricultural problems, including the Food and Agriculture Organization, as well as in inter-departmental and industry association meetings.

The Branch carries on trade promotional activities and assists Canadian exporters in many ways. Canadian firms are kept informed on market conditions and requirements in foreign countries, competition from other sources of supply, and exchange and tariff restrictions. Information is provided on sanitary and food and drug regulations in other countries and on related topics.

Commodity officers assist industry in participating in trade fairs abroad and help organize trade missions to foreign countries where these may be beneficial in stimulating exports of Canadian agricultural products. Surveys on markets abroad are made on request from industry, or are initiated by the Branch when information obtained from trade commissioners indicates that opportunities for trade in certain products exist in their territories. Up-to-date information on Canadian production, prices, availability of goods for export, and other related details is supplied to trade commissioners to assist them in assessing the market potential in their areas. The Trade Commissioner Service includes a number of officers with agricultural training who are assigned to posts, selected in consultation with the Departments of Agriculture and Fisheries, where their training and experience can be used to best advantage. Their reports on conditions affecting agriculture and fisheries development are published and made available to other government departments and to industry.

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* Prepared in the several branches concerned and collated in the Trade Publicity Branch, Department of Trade and Commerce, Ottawa. The work of the Standards Branch and the Small Business Branch of the Department, which are concerned with domestic matters only, is dealt with in the Domestic Trade Chapter, pp. 930-932.

The Canadian Wheat Board and the Board of Grain Commissioners for Canada were transferred to the jurisdiction of the Minister of Agriculture in 1960 but international negotiations, consultations and agreements remain the responsibility of the Department of Trade and Commerce, as does the responsibility for export promotion and liaison between the Canadian Wheat Board and trade commissioners.

Canadian Government Exhibition Commission.—The Canadian Government Exhibition Commission is responsible for the planning, organization and administration of all Canadian exhibits in fairs and exhibitions abroad. In addition, the Commission endeavours to advise private exhibitors and their agents on the best means of displaying Canadian products at overseas fairs. The Commission is also responsible for any international fairs and exhibitions held in Canada, financed and sponsored by the Federal Government.

Commodities Branch.—The principal role of the Commodities Branch is active trade promotion. The Branch provides liaison with industry and the business community in Canada, and passes on information about trade opportunities brought to light by officers of the Department at home and abroad.

The Branch has commodity specialists organized in seven divisions: Engineering and Equipment, Minerals and Metals, Forest Products, Chemicals, Appliances and Commercial Machinery, Textiles and Consumer Goods, and Transportation and Trade Services. Within these divisions, individual commodity specialists are concerned with such particular groups of products as engineering services and plant equipment, electrical and electronic equipment and transportation equipment, ferrous and non-ferrous metals, lumber, pulp and paper, chemicals and petroleum products and leather and rubber, as well as a wide range of consumer products. Commodity officers visit plants, attend meetings of business associations, prepare trade studies and market surveys, and assist in arranging displays of Canadian goods abroad for the purpose of introducing them in foreign markets. Commodity specialists direct the attention of trade commissioners to changes in supply conditions and to products available for export, and also relay market news received from trade commissioners to Canadian manufacturers and exporters.

The Branch is concerned with the administration of the Export and Import Permits Act and is active in the export control field, including international arrangements for the control of strategic materials. Branch representatives attend international commodity study groups in such products as tin, rubber, cotton, lead and zinc, where major world suppliers and users of the commodity concerned meet to arrange a framework for orderly marketing and price stability in principal world markets. The Branch also acts as a source of commercial intelligence and compiles and distributes trade information essential to the operation of other branches of the Department.

Export Credits Insurance Corporation.—The Export Credits Insurance Corporation was established under the provisions of the Export Credits Insurance Act 1944 (amended in 1946, 1948, 1951, 1957 and 1959), and is administered by a Board of Directors that includes the Deputy Minister of Trade and Commerce and the Deputy Minister of Finance. It insures persons carrying on business in Canada against risks involved in the export, manufacture, treatment or distribution of goods or the rendering of engineering, construction, technical or similar services. The main risks covered include: insolvency or protracted default on the part of the buyer; exchange restrictions in the buyer's country preventing the transfer of funds to Canada; cancellation of an import licence or the imposition of restrictions on the importation of goods not previously subject to restrictions; the occurrence of war between the buyer's country and Canada, or of war, revolution, etc., in the buyer's country.

The insurance is available under three main classifications: general commodities, capital goods and services. Coverage for general commodities may be procured by exporters under two types of policies: the Contracts Policy, which insures an exporter against loss from the time he books the order until payment is received; or the Shipments Policy, obtainable at lower rates of premium and covering the exporter from the time of shipment until payment is received. These policies are issued on a yearly basis, covering exporters' sales to all countries.

Insurance of capital goods offers protection to exporters dealing in plant equipment, heavy machinery, etc., where extended credit up to a maximum of five years may be necessary. Specific policies are issued for transactions involving capital goods, but the general terms and conditions are the same as those applicable to policies for general commodities. Specific policies are also issued to cover engineering, construction, technical or similar service contracts entered into between Canadian firms and persons in foreign countries who have agreed to purchase such services.

The Corporation insures exporters on a co-insurance basis up to a maximum of 85 p.c. of the gross invoice value of shipments. This co-insurance basis also operates in the distribution of recoveries obtained after payment of a loss; these recoveries are shared by the Corporation and the exporter in the proportions of 85 p.c. and 15 p.c., respectively.

Under the Export Credits Insurance Act, Sect. 21, the Corporation may be authorized to enter into certain contracts of insurance, where the Board of Directors of the Corporation is of opinion that a proposed contract of insurance would impose upon the Corporation a liability for a term or in an amount in excess of that which the Corporation would normally undertake, and in the opinion of the Minister of Trade and Commerce it is in the national interest that the proposed contract be entered into. Under Sect. 21A of the Act, the Corporation may be authorized by the Government to provide financing in respect of an export transaction. Such financing is available only in cases where extended credit terms in excess of five years are involved.

Industrial Development Branch.—This Branch co-ordinates the assistance offered by the Federal Government in the establishment and expansion of industries in Canada. In this capacity, it works closely with other federal agencies and with industrial development departments of the provinces. In addition, the Branch maintains close working arrangements with a wide-spread network of organizations throughout Canada, including municipalities, railways, banks, power companies, chambers of commerce, boards of trade and the Canadian Manufacturers' Association.

Information and guidance are provided on a multiplicity of matters related to industrial development. The Branch acts in an advisory capacity for Canadian manufacturers, processors and associated service establishments. It also aids established firms desiring to diversify into new lines of production. Inquiries from foreign firms and individuals regarding the manufacture of products in Canada under licence or royalty are screened and brought to the attention of Canadian manufacturers interested in producing additional items.

International Trade Relations Branch.—The International Trade Relations Branch deals with a wide variety of current trade issues including analysis of developments in international commercial relations and assistance in maintaining and further improving the access for Canadian goods in foreign markets. The Branch endeavours to find practical solutions for tariffs and other difficulties encountered by Canadian exporters. It has under constant review Canada's trading relations with other countries, and participates in conferences and negotiations under the General Agreement on Tariffs and Trade In addition, the Branch is concerned with work being done in the trade field by other international organizations.

The Branch has a major responsibility for the administration of Canada's existing trade agreements and is responsible for the preparation of material for trade and tariff negotiations with other countries. Information is maintained on foreign tariffs, customs legislation, taxes affecting trade, import licensing, exchange regulations, documentation, sanitary regulations, marking and labelling requirements, and measures pertaining to quotas, embargoes, and other import restrictions. This information is made available to exporters, government officials and others interested in these regulations as they affect Canadian export trade. The assistance of the Branch is available to exporters in dealing with difficulties resulting from the trade policies or regulations of other countries.

Trade Publicity Branch.—The principal function of the Trade Publicity Branch is to promote trade between Canada and other countries in the publicity field. It furnishes the commercial community of Canada with information concerning the assistance that exporters and importers may obtain from the Department of Trade and Commerce. The Branch is responsible also for stimulating a better appreciation by the general public of the importance of trade to the welfare of Canada. The attention of exporters and potential exporters is directed to opportunities for the disposal of their products in markets abroad, and of importers to sources of supply for raw materials and consumer goods unobtainable in Canada.

Its principal information medium is *Foreign Trade*, fortnightly publication of the Foreign Trade Service, in which are reproduced reports of Canadian trade commissioners on conditions in their respective territories, articles by Head Office personnel, commodity notes, foreign exchange rates, the itineraries of trade commissioners on tour in Canada, and trade and tariff regulations. A list of trade offices throughout the world is published once a month, and a directory of Head Office at periodic intervals.

Press releases are prepared and distributed to newspapers at home, and material of a similar character is dispatched to Canadian trade commissioners for distribution to newspapers abroad. Pamphlets and brochures are prepared to supplement other information on foreign markets, sources of supply, documentation, regulations and trade restrictions. Assistance is rendered to correspondents of newspapers and periodicals at home and abroad in the preparation of articles pertaining to various phases of Canada's foreign trade. The promotional work of this Branch is supported by moderate advertising at home and abroad through the daily press, periodicals and trade papers, and by films and radio.

Trade promotion, through the medium of trade fairs in other lands, is the responsibility of a Division in this Branch, which maintains close liaison with other branches of the Department and agencies of government and prepares information for consideration by the Committee on Trade Fairs Abroad.

Trade Commissioner Service.—The Trade Commissioner Service is the overseas arm of the Department and is actively engaged in the promotion of Canadian trade and the protection of Canada's commercial interests; 63 offices are maintained in 49 countries.

The prime function of the trade commissioners is to stimulate Canada's export trade. In so doing, every effort is made to bring Canadian exporters and prospective buyers together. On their own initiative, and in response to requests from the Department and Canadian businessmen, they study potential markets for specific Canadian commodities and services. Reports are provided on the demand in the country concerned, prices, competition, trade and exchange regulations, tariffs, shipping and packaging requirements, credit terms, channels of distribution, labelling regulations, etc. Inquiries from local businessmen for goods obtainable from Canada are forwarded to the Department in Ottawa, or directly to Canadian firms in a position to supply the products required.

The supervision of Canadian exhibits at overseas trade fairs and the provision of assistance to participating Canadian firms is an important function of many offices. Trade commissioners make local arrangements for and travel with Canadian trade missions visiting overseas markets. They also seek sources of supply for a wide variety of goods on behalf of Canadian importers.

In developing trade opportunities, Canada's trade commissioners travel extensively in their territories, visit leading industrial and commercial centres, call on government officials, businessmen, trade associations and municipal authorities in an effort to arouse interest in Canadian products. They establish social contacts with commercial interests, thereby developing goodwill for Canada and Canadian products, while creating connections for Canadian exporters and facilitating the collection of trade information. They return to Canada at periodic intervals and make tours of Canadian industrial and commercial centres. Such direct contacts enable them to discuss specific problems with businessmen and bring into focus the Canadian commercial scene. Trade commissioners report to the Department and advise Canadian firms on economic conditions and trade opportunities in their respective territories. Many reports are published in *Foreign Trade*, and provide Canadian businessmen with a wealth of commercial intelligence.

In countries where Canada has a diplomatic mission, the Canadian trade office is the commercial division and the trade commissioner has the rank of Minister (Commercial), Minister-Counsellor (Economic), Commercial Counsellor or Commercial Secretary. When attached to a consulate, he carries the title of Deputy Consul General (Commercial), Consul (Commercial), or Vice-Consul (Commercial), according to his rank, in addition to that of Trade Commissioner. He may also be the Consul General, in charge of the office. Where trade offices are detached, and do not form part of a diplomatic mission, the trade commissioner may also be required to undertake consular, immigration and other duties as the sole representative of Canada.

CANADIAN FOREIGN TRADE OFFICES ABROAD, AS AT MAR. 1, 1961

ARGENTINA.—Commercial Counsellor, Canadian Embassy, Bartolome Mitre 478, Buenos Aires.

AUSTRALIA.—
- Sydney: Commercial Counsellor, 7th Floor, Berger House, 82 Elizabeth Street, Sydney, N.S.W.
- Melbourne: Commercial Counsellor, Mobil Centre, 2 City Road, South Melbourne.
- Canberra: Commercial Secretary, Office of the High Commissioner for Canada, State Circle, Canberra.

AUSTRIA.—Commercial Counsellor, Opernringhof, Opernring 1, Vienna 1. Territory includes Bulgaria, Czechoslovakia, Hungary, Romania and Yugoslavia.

BELGIUM.—Commercial Counsellor, Canadian Embassy, 35 rue de la Science, Brussels. Territory includes Luxembourg.

BRAZIL.—
- Rio de Janeiro: Commercial Counsellor, Canadian Embassy, Edificio Metropole, Av. Presidente Wilson 165, Rio de Janeiro.
- São Paulo: Consul and Trade Commissioner, Canadian Consulate, Edificio Alois, Rua 7 de Abril 252, São Paulo.

CEYLON.—Commercial Secretary, Office of the High Commissioner for Canada, 6 Gregory's Road, Cinnamon Gardens, Colombo.

CHILE.—Commercial Secretary, Canadian Embassy, 5th Floor, Agustinas 1225, Santiago.

COLOMBIA.—Commercial Secretary and Consul, Canadian Embassy, Edificio Banco de Los Andes, Carrera 10, No. 16–92, Bogota. Territory includes Ecuador.

CONGO.—Canadian Consulate General, Forescom Bldg., Leopoldville 1. Territory includes Angola, Central African Republic, Chad, Congo, Gabon.

CUBA.—Commercial Secretary, Canadian Embassy, Edificio Ingenieros Civiles, Calle 17 y O Vedado, Havana, Cuba.

DENMARK.—Commercial Counsellor, Canadian Embassy, Prinsesse Maries Allé 2, Copenhagen. Territory includes Greenland and Poland.

Dominican Republic.—Commercial Counsellor, Canadian Embassy, Edificio Copello 408, Calle El Conde, Ciudad Trujillo. Territory includes Puerto Rico.

France.—Commercial Counsellor, Canadian Embassy, 35 Ave. Montaigne, Paris 8e. Territory includes Algeria, Cameroon Republic, Dahomey, Guinea, Ivory Coast, Mauretania, Morocco, Niger, Togoland and Volta.

Germany.—
Bonn: Commercial Counsellor, Canadian Embassy, 22 Zitelmannstrasse, Bonn.
Hamburg: Consul General, Canadian Consulate General, 69 Ferdinandstrasse, Hamburg.

Ghana.—Commercial Secretary, Office of the High Commissioner for Canada, E115/3 Independence Ave., Accra. Territory includes Gambia, Liberia and Sierra Leone.

Greece.—Commercial Counsellor, Canadian Embassy, 31 Vassilissis Sophias Ave., Athens. Territory includes Cyprus, Israel and Turkey.

Guatemala.—Canadian Government Trade Commissioner, 5 Avenida, 10–68, Zone I, Guatemala City. Territory includes Costa Rica, El Salvador, Honduras, Nicaragua, Panama and Canal Zone.

Haiti.—Chargé d'Affaires *ad interim* and Consul, Canadian Embassy, Route du Canape Vert, St. Louis de Turgeau, Port au Prince.

Hong Kong.—Canadian Government Trade Commissioner, Hong Kong and Shanghai Banking Corporation Bldg., Hong Kong. Territory includes Cambodia, Communist China, Laos, Viet Nam, Macao.

India.—
New Delhi: Commercial Counsellor, Office of the High Commissioner for Canada, 13 Golf Links Area, New Delhi.
Bombay: Canadian Government Trade Commissioner, Gresham Assurance House, Mint Road, Bombay.

Indonesia.—Commercial Division, Canadian Embassy, Djl. Budi Kemuliaan No. 6, Djakarta.

Iran.—Commercial Counsellor, Canadian Legation, 32 Anatole France, Tehran.

Ireland.—Commercial Secretary for Canada, 66 Upper O'Connell St., Dublin.

Italy.—Commercial Counsellor, Canadian Embassy, Via G. B. de Rossi 27, Rome. Territory includes Libya and Malta.

Japan.—Commercial Counsellor, Canadian Embassy, Tokyo. Territory includes Korea.

Lebanon.—Commercial Secretary, Canadian Embassy, Alpha Building, Rue Clemenceau, Beirut. Territory includes Iraq, Jordan, Persian Gulf Area and Syrian region of the United Arab Republic.

Mexico.—Commercial Secretary, Canadian Embassy, Melchor Ocampo 463, 7th Floor, Mexico 5, D.F.

Netherlands.—Commercial Counsellor, Canadian Embassy, Sophialaan 5-7, The Hague.

New Zealand.—Commercial Counsellor, Office of the High Commissioner for Canada, Government Life Insurance Bldg., Wellington. Territory includes Fiji, Samoa, French Oceania, Tahiti and Tonga.

Nigeria.—Commercial Counsellor, Office of the High Commissioner for Canada, 4th Floor Barclays Bank Bldg., 40 Marina Rd., Lagos. Address for letters: P.O. Box 851.

Norway.—Commercial Counsellor, Canadian Embassy, Fridtjof Nansens Plass 5, Oslo. Territory includes Iceland.

Pakistan.—Commercial Counsellor, Office of the High Commissioner for Canada, Hotel Metropole, Victoria Road, Karachi. Territory includes Afghanistan.

Peru.—Commercial Secretary, Canadian Embassy, Edificio Boza, Carabaya 831, Plaza San Martin, Lima. Territory includes Bolivia.

Philippines.—Consul General and Trade Commissioner, Canadian Consulate General, L & S Bldg., 3rd Floor, 1414 Dewey Blvd., Manila. Territory includes Republic of China (Taiwan).

PORTUGAL.—Commercial Counsellor, Canadian Embassy, Rua Marques de Fronteira, No. 8-4° D°, Lisbon. Territory includes Azores, Cape Verde Islands, Madeira and Portuguese Guinea.

RHODESIA AND NYASALAND, FEDERATION OF.—Canadian Government Trade Commissioner, 8th Floor, Grindlays Bank Chambers, Baker Avenue, Salisbury. Territory includes Kenya, Seychelles Islands, Tanganyika, Uganda and Zanzibar.

SINGAPORE.—Canadian Government Trade Commissioner, Rooms, 4, 5 and 6, American International Bldg., Robinson Road and Telegraph St., Singapore. Territory includes Brunei, Burma, Federation of Malaya, North Borneo, Sarawak and Thailand.

SOUTH AFRICA.—
- Johannesburg: Canadian Government Trade Commissioner, Mutual Bldg., 17th Floor, Corner Rissik and De Villiers Sts., Johannesburg.
- Cape Town: Canadian Government Trade Commissioner, 602 Norwich House, The Foreshore, Cape Town.

SPAIN.—Commercial Counsellor, Canadian Embassy, Edificio España, Avenida de Jose Antonio 88, Madrid. Territory includes Balearic Islands, Canary Islands, Gibraltar, Rio Muni and Rio de Oro.

SWEDEN.—Commercial Counsellor, Canadian Embassy, Strandvagen, 7-C, Stockholm. Territory includes Finland.

SWITZERLAND.—Commercial Counsellor, Canadian Embassy, Kirchenfeldstrasse 88, Berne.

UNION OF SOVIET SOCIALIST REPUBLICS.—Commercial Counsellor, Canadian Embassy, 23 Starokonyushenny Pereulok, Moscow.

UNITED ARAB REPUBLIC (EGYPTIAN REGION).—Commercial Counsellor, Canadian Embassy, 6 Sharia Rouston Pasha, Garden City, Cairo. Territory includes Aden, Sudan, Ethiopia, Saudi Arabia and Yemen.

UNITED KINGDOM.—
- London: Minister (Commercial), Office of the High Commissioner for Canada, One Grosvenor Square, London W1.
- Liverpool: Canadian Government Trade Commissioner, Martins Bank Building, Water Street, Liverpool.
- Glasgow: Canadian Government Trade Commissioner, Cornhill House, 144 West George Street, Glasgow.
- Belfast: Canadian Government Trade Commissioner, 36 Victoria Square, Belfast.

UNITED STATES.—
- Washington: Minister-Counsellor (Economic), Canadian Embassy, 1746 Massachusetts Ave., N.W., Washington.
- New York City: Deputy Consul General (Commercial), Canadian Consulate General, 680 Fifth Ave., New York City.
- Boston: Consul and Trade Commissioner, Canadian Consulate General, 607 Boylston St., Boston 16.
- Chicago: Consul and Trade Commissioner, Canadian Consulate General, 111 North Wabash Avenue, Chicago.
- Detroit: Consul and Trade Commissioner, Canadian Consulate, 1139 Penobscot Building, Detroit.
- Los Angeles: Consul and Trade Commissioner, Canadian Consulate General, 510 West Sixth Street, Los Angeles.
- New Orleans: Consul and Trade Commissioner, Canadian Consulate General, 215-217 International Trade Mart, New Orleans.
- San Francisco: Consul General, Canadian Consulate General, 3rd Floor, Kohl Building, 400 Montgomery Street, San Francisco.
- Seattle: Consul General, Canadian Consulate General, The Tower Building, Seventh Avenue at Olive Way, Seattle.

URUGUAY.—Commercial Counsellor, Canadian Embassy, No. 1409 Avenida Agraciada, Piso 7°, Montevideo. Territory includes Paraguay and Falkland Islands.

VENEZUELA.—Commercial Counsellor, Canadian Embassy, Avenida La Estancia No. 10, Ciudad Comercial Tamanaco, Caracas. Territory includes Netherlands Antilles.

WEST INDIES.—
- Port-of-Spain: Commercial Secretary, Colonial Building, 72 South Quay, Port-of-Spain.
- Kingston: Canadian Government Trade Commissioner, Barclays Bank Building, King Street, Kingston.

Section 2.—The National Energy Board

The National Energy Board was established by the National Energy Board Act, 1959 for the broad purpose of assuring the best use of energy resources in Canada. The Board is responsible for the regulation in the public interest of the construction and operation of oil and gas pipelines subject to the jurisdiction of the Parliament of Canada, the tolls charged for transmission by such pipelines, the export and import of gas, the export of electric power and the construction of those lines over which such power is exported. The Board is also required to study and keep under review all matters relating to energy within the jurisdiction of the Parliament of Canada and to recommend such measures as it considers necessary or advisable in the public interest with regard to such matters. The Act also authorizes the extension of the export and import provisions to oil upon proclamation by the Governor in Council. The Board, which reports to the Minister of Trade and Commerce, consists of a Chairman, a Vice-Chairman and three other members.

The Act was given Royal Assent on July 18, 1959, the members were appointed by Order in Council on Aug. 10, 1959 and the Act came into force by proclamation on Nov. 2, 1959. The Act supersedes the Pipe Lines Act, formerly administered by the Board of Transport Commissioners for Canada, and the Exportation of Power and Fluids and Importation of Gas Act, formerly administered by the Standards Branch of the Department of Trade and Commerce. Provision was made in the new Act for the continuation or re-definition of authorizations issued under the two previous Acts, and in 1960 the Act was amended to extend the duration of licences to export power issued under the Exportation of Power and Fluids and Importation of Gas Act to give the National Energy Board additional time to hear applications for replacement licences.

In the interval between passage of the Act and its coming into force, the Board commenced organizing its staff and facilities, prepared its rules of practice and procedure and drafted for submission to the Governor in Council regulations relating to the export of gas and electricity. Such regulations, and the rules of practice and procedure, came into force concurrently with the proclamation of the Act on Nov. 2, 1959.

At the time of coming into force of the Act, there existed a substantial backlog of projects for the export of gas and for the construction of pipeline facilities to export such gas, which had accumulated during the period in which the Royal Commission on Energy was conducting its investigations and the subsequent period prior to the proclamation of the National Energy Board Act. Consequently, as soon as the Act was proclaimed, six applications for licences to export gas and four applications for certificates of public convenience and necessity respecting related pipeline facilities were made to the Board. At its first hearings commencing Jan. 5, 1960, the Board heard jointly these applications, namely:—

(1) Trans-Canada Pipe Lines Limited for certificates of public convenience and necessity under Part III and for licences under Part VI of the Act;

(2) Alberta and Southern Gas Company Limited, for a licence under Part VI of the Act;

(3) Alberta Natural Gas Company for a certificate of public convenience and necessity under Part III of the Act;

(4) Canadian-Montana Pipe Line Company for a certificate of public convenience and necessity under Part III and a licence under Part VI of the Act;

(5) Westcoast Transmission Company Limited for a licence under Part VI of the Act; and

(6) Niagara Gas Transmission Limited for a certificate of public convenience and necessity under Part III and a licence under Part VI of the Act.

Following its first report, issued in March 1960, the Board with the approval of the Governor in Council issued the licences and certificates referred to in items (1) to (5) and denied the application of Niagara Gas Transmission Limited. This company subsequently made a new application, which was approved following a public hearing in May. Also in May the Board heard applications for new licences in respect of previously established gas exports from Canadian-Montana Pipe Line Company and Gordon M. Plotke;

these were approved in June. To Sept. 1, 1960, the only other gas export application before the Board was an application by Texaco Exploration Company to export certain quantities of butane through the Trans Mountain oil pipeline for a short period in 1960 and 1961. This application was also approved.

In considering application for a gas export licence, the Board is required to satisfy itself that the quantity of gas to be exported does not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada having regard to the trends in the discovery of gas in Canada, and that the price to be charged by an applicant for gas exported by him is just and reasonable in relation to the public interest. Therefore, before the Board can dispose of any of these gas export licence applications, it has to estimate the actual and prospective reserves of gas in Canada and the probable demand in Canada for gas in order to arrive at an estimate of the surplus available for export. Then the Board must examine the economics of each project in detail.

In respect of oil pipelines, the only application heard by the Board was that of Interprovincial Oil Pipe Line Company for a certificate authorizing the construction of certain new pump stations and additional pumping capacity at existing stations on its pipeline. This application was heard in May and approved in June.

Under the transitional provisions of the Act, licences for the export of power issued under the Exportation of Power and Fluids and Importation of Gas Act deemed to have been issued under the National Energy Board Act. By the amendment to the National Energy Board Act previously mentioned, such licences, which would normally have expired on Mar. 31, 1960 were extended to Dec. 31, 1961 unless replaced before that time by a licence under the new Act. In October 1960, the first application for a licence to export power, that of Fraser Companies, Limited, was heard and the licence, containing conditions respecting tolerances, price and export agreements, was subsequently issued for a period of five years. Applications of The New Brunswick Electric Power Commission, the Maine and New Brunswick Electrical Power Company Limited, and The Hydro-Electric Power Commission of Ontario were also heard and were under consideration at the end of the year. During 1960, the Board completed the issuance of certificates for power export facilities already in use when the Board came into existence. Forty-one separate international power lines were certified at the year-end.

As part of the transition from the old statutes to the new, the Board is required to issue certificates of public convenience and necessity to oil and gas pipeline companies which had received from the Board of Transport Commissioners for Canada leave to construct facilities under the Pipe Lines Act. At the end of 1960, 11 of the 15 certificates required had been completed and issued and the remainder were in course of preparation.

During the year, the Board conducted special studies on several matters connected with energy forecasts in co-operation with other government departments and agencies. The position of Energy Counsellor was established in the Canadian Embassy at Washington at the request of various departments including the National Energy Board. Through the Energy Counsellor and by direct contact, the Board kept in touch with the proceedings and decisions of the Federal Power Commission and other United States agencies whose activities are relevant to those of the Board. In addition, liaison was maintained and further developed with the various provincial departments and agencies operating in the energy field. The Board also worked closely on certain special studies with the Department of Defence Production and the Department of Northern Affairs and National Resources. At the request of the latter, a study of the Canol Pipe Lines was undertaken and was continuing at the year-end.

Section 3.—The Development of Tariffs

Limitations of space in the Year Book have made it necessary, in regard to tariffs, to adopt the policy of confining any detail regarding commodities and countries to tariff relationships in force at present and to summarize as much as possible historical data and details of preceding tariffs, giving references to those editions of the Year Book where extended treatments may be found.

Subsection 1.—The Canadian Tariff Structure*

The Canadian Tariff consists, in the main, of three sets of tariff rates—British Preferential, Most-Favoured-Nation, and General.

British Preferential Tariff rates are, with some exceptions, the lowest rates. They are applied to imported commodities from British countries, with the exception of Hong Kong, when conveyed without trans-shipment from a port of any British country enjoying the benefits of the British Preferential Tariff into a sea, lake or river port of Canada. Some Commonwealth countries have trade agreements with Canada which provide for rates of duty, on certain specified goods, lower than the British Preferential rates.

Most-Favoured-Nation rates are usually higher than the British Preferential rates and lower than the General Tariff rates. They are applied to commodities imported from countries with which Canada has trade agreements. These rates would apply to British countries when they are lower than the British Preferential Tariff rates. The most important trade agreement concerning the effective rates applied to goods imported from countries entitled to Most-Favoured-Nation rates is the General Agreement on Tariffs and Trade (GATT).

General Tariff rates are applied to goods imported from the few countries with which Canada has not made trade agreements.

There are numerous goods which are duty free under the British Preferential Tariff, or under both the British Preferential and Most-Favoured-Nation Tariffs, or under all Tariffs.

Valuation.—In general, the Customs Act, as amended effective Sept. 6, 1958, provides that the value for duty of imported goods shall be the fair market value of like goods as established in the home market of the exporter at the time when and place from which the goods are shipped directly to Canada when sold "(*a*) to purchasers located at that place with whom the vendor deals at arm's length and who are at the same or substantially the same trade level as the importer, and (*b*) in the same or substantially the same quantities for home consumption in the ordinary course of trade under competitive conditions". In cases where like goods are not sold for home consumption but similar goods are sold, the value for duty shall be the cost of production of the goods imported plus an amount for gross profit at least equal in percentage to that earned on the sale of similar goods in the country of export. The value for duty may, in no case, be less than the amount for which the goods were sold to the purchaser in Canada, exclusive of all charges thereon after their shipment from the country of export. Internal taxes in the country of export (when not incurred on exported goods), the cost of shipping goods to Canada and similar charges do not normally form part of the value for duty. There are, of course, further provisions for determining value for duty under the Act.

Dumping.—Sect. 6 of the Customs Tariff provides that when the actual selling price of goods being imported is less than the fair market value and the goods are of a class or kind made or produced in Canada, a special or dumping duty shall be collected. This duty is to be equal to the difference between the actual selling price and the fair market value of the goods, except that it may not be more than 50 p.c. *ad valorem*. These provisions are designed to offset the advantage foreign exporters may achieve by exporting to Canada at less than the going prices.

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* Information relating to rate of duty and value for duty is available from the Department of National Revenue, Customs and Excise Division, which administers the Customs Act and the Customs Tariff Act.

Drawback.—There are provisions in the Customs and Excise Tax Acts for the repayment of a portion of the duty, sales and/or excise taxes paid on imported goods used in the manufacture of products later exported. The purpose of these drawbacks (as these repayments are called) is to assist Canadian manufacturers to compete in foreign markets with foreign producers of similar goods. A second class of drawback, known as "home consumption" drawbacks, is provided for under the Customs Tariff Act and applies to imported materials and/or parts used in the production of specified goods to be consumed in Canada.

The Tariff Board.—The organization and functions of the Tariff Board are described at p. 103 of this volume.

Subsection 2.—Tariff and Trade Arrangements with Other Countries as at Dec. 31, 1960

Canada's tariff arrangements with other countries fall into three main categories: trade agreements with a number of Commonwealth countries; the General Agreement on Tariffs and Trade (GATT); and other agreements and arrangements.

The Commonwealth countries with which Canada has trade agreements are as follows: Australia; the West Indies and the Bahamas, Bermuda, British Guiana and British Honduras; New Zealand; Federation of Rhodesia and Nyasaland; Union of South Africa; and the United Kingdom and Colonies. Preferences are accorded by Canada to India, Pakistan, Ghana and Nigeria. Tariff relations between Canada and Ceylon, Ghana, the Federation of Malaya and Cyprus are governed by the Canada–United Kingdom Agreement. These agreements and arrangements have been modified and supplemented by GATT.

Canada exchanges most-favoured-nation treatment with 38 countries under the General Agreement on Tariffs and Trade. These countries are shown in the list on pp. 1026-1033. In addition, Switzerland has acceded provisionally, and eight other countries participate in the work of GATT—Argentina, Cambodia, Israel, Poland, Portugal, Spain, Tunisia and Yugoslavia. The protocol of Provisional Application of the General Agreement on Tariffs and Trade was signed by Canada on Oct. 30, 1947 and brought the Agreement into force on Jan. 1, 1948.

GATT is a multilateral trade agreement providing for scheduled tariff concessions and the exchange of most-favoured-nation treatment among the contracting parties and laying down rules and regulations to govern the conduct of international trade. Under the system of multilateral tariff negotiations initiated under GATT, four general rounds of negotiations have taken place: at Geneva, Switzerland, in 1947; at Annecy, France, in 1949; at Torquay, England, in 1950-51; and again at Geneva in 1955-56. A fifth tariff conference opened in Geneva on Sept. 1, 1960. The tariff concessions Canada granted and received at the first Geneva Conference are described in the 1948-49 Year Book, pp. 875-877, and those negotiated at Annecy are discussed in the 1950 Year Book, pp. 968-970. The Torquay negotiations are discussed in the 1952-53 edition, pp. 996-997.

Canada already had most-favoured-nation trade agreements with a number of GATT members prior to the effective date of the General Agreement. These agreements with individual countries continue in force in conjunction with the General Agreement. As an exception, however, the Canada–U.S. Trade Agreement of 1938 is suspended for as long as both countries continue to be contracting parties to GATT.

Other arrangements include a trade agreement with the Republic of Ireland exchanging preferences and most-favoured-nation agreements, and other arrangements of a less formal nature with many countries not contracting parties to GATT.

Tariff and Trade Arrangements with Commonwealth Countries as at Dec. 31, 1960

Country	Agreement	Principal Terms
AUSTRALIA................	Trade Agreement signed Feb. 12, 1960; in force June 30, 1960. GATT effective Jan. 1, 1948.	Agreement includes schedules of tariff rates and exchange of British preferential rates on items not scheduled. May be terminated on six months notice.
BRITISH CARIBBEAN: THE WEST INDIES (BARBADOS, JAMAICA, LEEWARD AND WINDWARD ISLANDS, TRINIDAD AND TOBAGO), BAHAMAS, BERMUDA, BRITISH GUIANA AND BRITISH HONDURAS.	Trade Agreement signed July 6, 1925, in force Apr. 30, 1927; Canadian notice of termination of Nov. 23, 1938, was replaced by notice of Dec. 27, 1939, which continued the Agreement. The British West Indies (except Jamaica), Bermuda, British Guiana and British Honduras participate in GATT.	The parties exchange specified tariff preferences. Agreement may be terminated on six months notice.
CEYLON....................	Relations continue to be governed by the Trade Agreement of 1937 between Canada and the United Kingdom. GATT effective July 29, 1948.	Canada and Ceylon exchange preferential tariff treatment.
CYPRUS....................	Relations continue to be governed by Trade Agreement of 1937 with the United Kingdom.	Canada exchanges preferential treatment with Cyprus.
GHANA....................	Relations continue to be governed by the Trade Agreement of 1937 between Canada and the United Kingdom. GATT effective Oct. 18, 1957.	Canada grants Ghana the British preferential rates, except on cocoa beans.
INDIA......................	Since 1897 Canada has unilaterally accorded British preferential treatment to India but without contractual obligation. GATT effective July 8, 1948.	In addition to preferences granted to India, most-favoured-nation treatment is exchanged under GATT.
MALAYA, FEDERATION OF...	Relations continue to be governed by the Trade Agreement of 1937 between Canada and the United Kingdom. GATT effective Oct. 24, 1957.	Canada grants Malaya British preferential rates in return for such preferences as exist in the Malayan tariff.
NEW ZEALAND............	Trade Agreement signed Apr. 23, 1932; in force May 24, 1932. GATT effective July 26, 1948.	The parties exchange specific preferences on scheduled goods and reciprocally concede British preferential rates on items not scheduled. May be terminated on six months notice.
NIGERIA, FEDERATION OF...	Relations continue to be governed by Trade Agreement of 1937 with the United Kingdom. GATT effective Oct. 1, 1960.	Canada accords British preferential treatment to Nigeria.
PAKISTAN.................	Canada unilaterally accords Pakistan British preferential treatment but without contractual obligation. GATT effective July 30, 1948.	In addition to preferences granted to Pakistan, most-favoured-nation treatment is exchanged under GATT.

Tariff and Trade Arrangements with Commonwealth Countries as at Dec. 31, 1960—concluded

Country	Agreement	Principal Terms
RHODESIA AND NYASALAND, FEDERATION OF.	Trade Agreement signed Feb. 6, 1958; in force Feb. 7, 1958. GATT effective in Southern Rhodesia May 19, 1948; extended to whole Federation, Oct. 29, 1954.	Canada exchanges preferential treatment with the Federation of Rhodesia and Nyasaland.
UNION OF SOUTH AFRICA...	Trade Agreement signed Aug. 20, 1932; in force Oct. 13, 1932.	Agreement includes schedules of tariff preferences granted by each country. May be terminated on six months notice.
	Exchange of notes Aug. 2–31, 1935; effective retroactive from July 1, 1935. GATT effective June 14, 1948.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
UNITED KINGDOM..........	Trade Agreement signed Feb. 23, 1937, effective Sept. 1, 1937; modified by exchanges of letters Nov. 16, 1938 and Oct. 30, 1947. GATT effective Jan. 1, 1948.	Various concessions are granted by each country including exchange of preferential tariff rates. The Agreement (as modified) includes provisions relating to the Colonies, Dependencies and Trusteeships.

Tariff and Trade Arrangements with Non-Commonwealth Countries as at Dec. 31, 1960

Country	Agreement	Principal Terms
ARGENTINA................	Trade Agreement signed Oct. 2, 1941; provisionally in force Nov. 15, 1941.	Exchange of most-favoured-nation treatment. Provisional application may be terminated on three months notice.
AUSTRIA..................	GATT effective Oct. 19, 1951.	Exchange of most-favoured-nation treatment.
BELGIUM-LUXEMBOURG....	Convention of Commerce with Belgium-Luxembourg Economic Union (including Belgian colonies) entered into effect Oct. 22, 1924. GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.
BOLIVIA....................	Order in Council of July 20, 1935, accepted Article 15 of the United Kingdom-Bolivia Treaty of Commerce of Aug. 1, 1911.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.
BRAZIL.....................	Trade Agreement signed Oct. 17, 1941; provisionally in force from date of signing and definitively on Apr. 16, 1943. GATT effective July 31, 1948.	Exchange of most-favoured-nation treatment.
BURMA....................	GATT effective July 29, 1948.	Exchange of most-favoured-nation treatment.
CAMBODIA..................	Franco-Canadian Trade Agreement of 1933 applied to Cambodia.	Since the creation of Cambodia as an independent state in 1955, Canada has continued to grant most-favoured-nation rates.

Tariff and Trade Arrangements with Non-Commonwealth Countries as at Dec. 31, 1960—continued

Country	Agreement	Principal Terms
CAMEROONS	Franco-Canadian Trade Agreement of 1933 applied to Cameroons.	Since the creation of Cameroons as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
CENTRAL AFRICAN REPUBLIC.	Franco-Canadian Trade Agreement of 1933 applied to Central African Republic.	Since the creation of the Central African Republic as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
CHAD	Franco-Canadian Trade Agreement of 1933 applied to Chad.	Since the creation of Chad as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
CHILE	Trade Agreement signed Sept. 10, 1941; provisionally in force Oct. 15, 1941, and definitively on Oct. 29, 1943. GATT effective Mar. 16, 1948.	Exchange of most-favoured-nation treatment.
CHINA	*Modus vivendi* signed Sept. 26, 1946; in effect since Sept. 28, 1946.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
COLOMBIA	Treaty of Commerce with United Kingdom of Feb. 16, 1866, applies to Canada. Modified by protocol of Aug. 20, 1912, and exchange of notes Dec. 30, 1938. A Trade Agreement between Colombia and Canada was signed Feb. 20, 1946, but has not been put into force.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
CONGO, REPUBLIC OF (BRAZZAVILLE).	Franco-Canadian Trade Agreement of 1933 applied to Congo (Brazzaville).	Since the creation of Congo (Brazzaville) as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
CONGO, REPUBLIC OF (LEOPOLDVILLE).	Belgo-Canadian Convention of Commerce of 1924 applied to the Congo.	Since the Congo's independence in 1960, Canada has continued to grant most-favoured-nation rates.
COSTA RICA	*Modus vivendi* signed Nov. 18, 1950; brought into force Jan. 26, 1951.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
CUBA	GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment (excluding preferences accorded by Cuba to the United States).
CZECHOSLOVAKIA	Convention of Commerce signed Mar. 15, 1928; in force Nov. 14, 1928. GATT effective May 21, 1948.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.
DAHOMEY	Franco-Canadian Trade Agreement of 1933 applied to Dahomey.	Since the creation of Dahomey as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.

Tariff and Trade Arrangements with Non-Commonwealth Countries as at Dec. 31, 1960—continued

Country	Agreement	Principal Terms
DENMARK (including GREENLAND).	Treaties of Peace and Commerce with United Kingdom of Feb. 13, 1660 and July 11, 1670, apply to Canada. GATT effective May 28, 1950.	Exchange of most-favoured-nation treatment. Declaration of May 9, 1912 provides means for separate termination by Dominions on one years notice.
DOMINICAN REPUBLIC......	Trade Agreement signed Mar. 8, 1940; in force provisionally Mar. 15, 1940, and definitively Jan. 22, 1941. GATT effective May 19, 1950.	Exchange of most-favoured-nation treatment including scheduled concessions.
ECUADOR..................	*Modus vivendi* signed Nov. 10, 1950; in force Dec. 1, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
EGYPT (REGION OF UNITED ARAB REPUBLIC).	Exchange of notes Nov. 26 and Dec. 3, 1952; in force Dec. 3, 1952.	Exchange of most-favoured-nation rates. May be terminated on six months notice.
EL SALVADOR..............	Exchange of notes of Nov. 2, 1937; in force Nov. 17, 1937.	Exchange of most-favoured-nation treatment. May be terminated on four months notice.
ETHIOPIA..................	Exchange of notes effective June 3, 1955.	Exchange of most-favoured-nation treatment.
FINLAND..................	Exchange of notes of Nov. 13–17, 1948; effective Nov. 17, 1948. GATT effective May 25, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
FRANCE AND FRENCH OVERSEAS TERRITORIES.	Trade Agreement signed May 12, 1933; in force June 10, 1933. Exchange of notes of Sept. 29, 1934, and additional protocol of Feb. 26, 1935. GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment including scheduled concessions. May be terminated on three months notice.
GABON.....................	Franco-Canadian Trade Agreement of 1933 applied to Gabon.	Since the creation of Gabon as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
GERMANY, FEDERAL REPUBLIC OF.	GATT effective Oct. 1, 1951.	Exchange of most-favoured-nation treatment.
GREECE...................	*Modus vivendi* by exchange of notes of July 24–28, 1947; effective Aug. 28, 1947. GATT effective Mar. 1, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
GREENLAND................	(See Denmark)	
GUATEMALA................	Trade Agreement signed Sept. 28, 1937; in force Jan. 14, 1939.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
GUINEA...................	As former French territory, participated in GATT.	Since creation of Guinea as an independent state in 1959, GATT members agree to continue to accord most-favoured-nation treatment for a period of two years.

Tariff and Trade Arrangements with Non-Commonwealth Countries as at Dec. 31, 1960—continued

Country	Agreement	Principal Terms
HAITI	Trade Agreement signed Apr. 23, 1937; in force Jan. 10, 1939. GATT effective Jan. 1, 1950.	Exchange of most-favoured-nation treatment.
HONDURAS	Exchange of notes signed July 11, 1956, effective July 18, 1956. Ratified in Honduras Sept. 5, 1956.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
ICELAND	Although there is no contractual obligation, Canada and Iceland adhere to the terms of a treaty originally concluded between Denmark and the United Kingdom on Feb. 13, 1660.	Exchange of most-favoured-nation treatment.
INDONESIA	GATT effective Mar. 1, 1948.	Exchange of most-favoured-nation treatment.
IRAN	Special arrangement by Order in Council effective Feb. 1, 1951.	Canada grants most-favoured-nation tariff rates as long as Iran accords reciprocal treatment.
IRAQ	Special arrangement by Order in Council effective Sept. 15, 1951.	Canada grants and receives most-favoured-nation tariff rates.
IRELAND	Trade Agreement signed Aug. 20, 1932; in force Jan. 2, 1933.	Canada grants British preferential tariff in return for preferential rates where such exist and for most-favoured-nation rates on non-preferential items. May be terminated on six months notice.
ISRAEL	Canada-United Kingdom Agreement of 1937 applied under the British Palestine Mandate.	Since the creation of the State of Israel in May 1948, Canada has continued to grant most-favoured-nation rates.
ITALY	*Modus vivendi* by exchange of notes of Apr. 23–28, 1948; effective Apr. 28, 1948. GATT effective Jan. 1, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
IVORY COAST	Franco-Canadian Trade Agreement of 1933 applied to the Ivory Coast.	Since the creation of the Ivory Coast as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
JAPAN	Agreement on Commerce signed Mar. 31, 1954; effective June 7, 1954. GATT effective Sept. 10, 1955.	Exchange of most-favoured-nation treatment. Remains in force for one year from ratification and thereafter unless terminated on three months notice.
LAOS	Franco-Canadian Trade Agreement of 1933 applied to Laos.	Since the creation of Laos as an independent state in 1955, Canada had continued to grant most-favoured-nation rates.
LEBANON	Special arrangement by Order in Council of Nov. 19, 1946.	Canada grants most-favoured-nation tariff rates as long as Lebanon accords reciprocal treatment.

Tariff and Trade Arrangements with Non-Commonwealth Countries as at Dec. 31, 1960—continued

Country	Agreement	Principal Terms
LIBERIA	Special arrangement by Order in Council of June 3, 1955.	Canada grants most-favoured-nation tariff rates as long as Liberia accords reciprocal treatment.
LIECHTENSTEIN	(See Switzerland)	
LUXEMBOURG	(See Belgium)	
MALAGASY REPUBLIC	Franco-Canadian Trade Agreement of 1933 applied to Malagasy Republic.	Since the creation of Malagasy Republic as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
MALI, FEDERATION OF	Franco-Canadian Trade Agreement of 1933 applied to Mali.	Since the creation of Mali as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
MEXICO	Trade Agreement signed Feb. 8, 1946; in force provisionally same date. Ratifications exchanged on May 6, 1947; definitively in force 30 days from that date.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
MOROCCO	Various agreements applied to French, Spanish and International Zones of Morocco.	Since the creation of Morocco as an independent state in 1956, Canada has continued to grant most-favoured-nation rates.
NETHERLANDS	Convention of Commerce of July 11, 1924. Suspended during war; reinstated by exchange of notes Feb. 1 and 5, 1946. Includes Netherlands Antilles and Surinam. GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.
NICARAGUA	Trade Agreement signed Dec. 19, 1946; in force provisionally same date. GATT effective May 28, 1950.	Exchange of most-favoured-nation treatment.
NIGER	Franco-Canadian Trade Agreement of 1933 applied to Niger.	Since the creation of Niger as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
NORWAY	Convention of Commerce and Navigation with United Kingdom of Mar. 18, 1826, applied to Canada. GATT effective July 10, 1948.	Exchange of most-favoured-nation treatment. Convention of May 16, 1913 provides means for separate termination by Dominions on one years notice.
PANAMA	Order in Council of July 20, 1935, accepted Article 12 of United Kingdom-Panama Treaty of Commerce of Sept. 25, 1928. Treaty terminated in 1942.	While contractual obligation has expired, Canada and Panama continue to exchange most-favoured-nation treatment.
PARAGUAY	Exchange of notes of May 21, 1940; in force June 21, 1940.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.

Tariff and Trade Arrangements with Non-Commonwealth Countries as at Dec. 31, 1960—continued

Country	Agreement	Principal Terms
PERU	GATT effective Oct. 8, 1951.	Exchange of most-favoured-nation treatment.
PHILIPPINES	No agreement at present.	Canada and Philippines, without contractual obligation, exchange most-favoured-nation treatment (excluding preferences accorded by the Philippines to the United States).
POLAND	Convention of Commerce signed July 3, 1935, in force Aug. 15, 1936.	Exchange of most-favoured-nation treatment including scheduled reductions. May be terminated on three months notice.
PORTUGAL, PORTUGUESE ADJACENT ISLANDS AND PORTUGUESE OVERSEAS PROVINCES.	Trade Agreement signed May 28, 1954 provisionally in effect July 1, 1954, definitively in force on ratification Apr. 29, 1955.	Exchange of most-favoured-nation treatment. Remains in effect for two years from ratification and thereafter unless terminated on three months notice.
SENEGAL	Franco-Canadian Trade Agreement of 1933 applied to Senegal.	Since the creation of Senegal as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
SPAIN AND SPANISH POSSESSIONS.	Since Aug. 1, 1928, Canada has adhered to the United Kingdom–Spain Treaty of Commerce of Oct. 31, 1922.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
	Trade Agreement signed May 26, 1954, provisionally in effect July 1, 1954, definitively in force on ratification June 30, 1955.	Supplements and amends United Kingdom–Spanish Treaty of Commerce. Remains in effect for three years from ratification, and thereafter unless terminated on three months notice.
SWEDEN	United Kingdom–Sweden Convention of Commerce and Navigation of Mar. 18, 1826, applies to Canada. GATT effective May 1, 1950.	Exchange of most-favoured-nation treatment. Declaration of Nov. 27, 1911 provides means for separate termination by Dominions on one years notice.
SWITZERLAND	United Kingdom – Switzerland Treaty of Friendship, Commerce and Reciprocal Establishment of Sept. 6, 1855, applies to Canada. By exchange of notes Liechtenstein included under terms of this Agreement, effective Aug. 2, 1947. Switzerland has acceded to GATT provisionally.	Exchange of most-favoured-nation treatment. Convention of Mar. 30, 1914, provides means for separate termination by the Dominions on one years notice.
SYRIA (REGION OF UNITED ARAB REPUBLIC).	Special Arrangement by Order in Council of Nov. 19, 1946.	Canada grants most-favoured-nation tariff rates as long as Syria accords reciprocal treatment.

Tariff and Trade Arrangements with Non-Commonwealth Countries as at Dec. 31, 1960—concluded

Country	Agreement	Principal Terms
TOGOLAND	Franco-Canadian Trade Agreement of 1933 applied to Togoland.	Since the creation of Togoland as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
TUNISIA	Franco-Canadian Trade Agreement of 1933 applied to Tunisia (Tunisia is in customs union with France).	Since the creation of Tunisia as an independent state in 1956, Canada has continued to grant most-favoured-nation rates.
TURKEY	Exchange of notes signed Mar. 1, 1948; in effect Mar. 15, 1948. GATT effective Oct. 17, 1951.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
UNION OF SOVIET SOCIALIST REPUBLICS.	Trade Agreement signed Feb. 29, 1956; renewed Apr. 18, 1960. Ratifications exchanged Sept. 16, 1960.	Exchange of most-favoured-nation treatment and undertaking by U.S.S.R. to purchase from Canada twice as much as their sales to Canada up to $25 million annually. At least half of Soviet purchases are to be in wheat. In force for three years from date of signature and may there after be extended by mutual agreement.
UNITED ARAB REPUBLIC	(See Egypt and Syria)	
UNITED STATES	Trade Agreement signed Nov. 17, 1938; suspended as long as both countries continue to be contracting parties to GATT. GATT effective Jan. 1, 1948.	Most-favoured-nation treatment exchanged under 1938 Agreement is continued under GATT.
UPPER VOLTA (VOLTAIC REPUBLIC).	Franco-Canadian Trade Agreement of 1933 applied to Upper Volta.	Since the creation of Upper Volta as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
URUGUAY	Trade Agreement signed Aug. 12, 1936; in force May 15, 1940. Additional protocol signed Oct. 19, 1953. GATT effective Dec. 16, 1953.	Exchange of most-favoured-nation treatment.
VIET NAM	Franco-Canadian Trade Agreement of 1933 applied to Viet Nam.	Since the creation of Viet Nam as an independent state, Canada has continued to accord most-favoured-nation rates.
VENEZUELA	*Modus vivendi* signed and brought into force Oct. 11, 1950.	Exchange of most-favoured-nation treatment. Made for one year subject to annual renewal.
YUGOSLAVIA	Trade Agreements Act of June 11, 1928, accepted Article 30 of United Kingdom-Serb-Croat-Slovene Treaty of Commerce and Navigation of May 12, 1927; in force Aug. 9, 1928.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.

CHAPTER XXI.—PUBLIC FINANCE*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Section 1.—Combined Statistics of Public Finance for All Governments

Combined statistics of public finance for all governments in Canada—federal, provincial and municipal—are presented in this Section. More detailed information for each level of government is given in Sections 2, 3 and 4. A special article covers the incidence of taxation in Canada at the three levels.

Combined Revenue and Expenditure.—Tables **1** and **2** give details of the federal, provincial and municipal net combined revenue by source and net combined current and capital expenditure by function, respectively, for 1957 and 1958. This net basis has been prepared by deducting from revenue, and the appropriate expenditure, certain specified amounts such as grants-in-aid and shared-cost contributions from other governments, institutional revenue, and interest, premium, discount and exchange revenue. Amounts provided for debt retirement are excluded to avoid duplication since all expenditure resulting from capital borrowings is included.

Inter-government transfers such as subsidy payments by the Federal Government to the provincial governments are unconditional grants and therefore cannot be offset against any specific expenditure. These are set out separately in Tables **1** and **2** in order to prevent duplication and to provide additive totals. Because of the differing accounting practices of governments and variations in fiscal year-ends, discrepancies appear between the amounts recorded as inter-government transfers in the two tables.

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* Revised in the Public Finance and Transportation Division, Dominion Bureau of Statistics.

1.—Combined Revenue of All Governments, 1957 and 1958

NOTE.—Figures are for fiscal years ended nearest Dec. 31.

Source of Revenue	1957				1958			
	Federal	Provincial	Municipal	Total	Federal	Provincial	Municipal	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Taxes—								
Income—								
Corporations	1,295,471	214,438	—	1,509,909	1,075,878	226,150	—	1,302,028
Individuals	1,634,789	41,295	—	1,676,084	1,499,849	47,773	—	1,547,622
Interest, dividends and other income going abroad	64,334	—	—	64,334	61,213	—	—	61,213
General sales	878,962	183,159	52,424	1,114,545	868,114	186,733	57,969	1,112,816
Motor fuel and fuel oil sales	—	346,570	342	346,912	—	364,401	348	364,749
Other sales	—	48,589	3,095	51,684	—	52,852	3,571	56,423
Excise duties and special excise taxes	548,961	—	—	548,961	556,888	—	—	556,888
Customs import duties	498,069	—	—	498,069	486,508	—	—	486,508
Real and personal property	—	8,311	915,947	924,258	—	8,737	996,244	1,004,981
Business	—	—	57,959	57,959	—	—	64,441	64,441
Succession duties	71,608	52,645	—	124,253	72,535	55,797	—	128,332
Other	1,498	59,987	7,655	69,140	1,213	67,716	10,081	79,010
Totals, Taxes	4,993,692	954,994	1,037,422	6,986,108	4,622,198	1,010,159	1,132,654	6,765,011
Privileges, Licences and Permits—								
Liquor control and regulation	11	40,514	—	40,525	10	38,412	—	38,422
Motor vehicle	—	139,729	—	139,729	—	146,408	—	146,408
Natural resources	4,280	278,010	—	282,290	10,878	258,770	—	269,648
Other	16,935	20,307	21,760	59,002	18,561	22,897	23,666	65,124
Totals, Privileges, Licences and Permits	21,226	478,560	21,760	521,546	29,449	466,487	23,666	519,602
Sales and services	57,291	28,435	—	85,726	56,910	33,303	—	90,213
Receipts from Government Enterprises—								
Liquor boards and commissions	—	164,544	—	164,544	—	175,338	—	175,338
Other	78,114	3,911	31,101	113,126	99,924	5,748	37,858	143,530
In lieu of municipal taxes from federal and provincial government enterprises	—	—	6,354	6,354	—	—	7,168	7,168
Totals, Receipts from Government Enterprises	78,114	168,455	37,455	284,024	99,924	181,086	45,026	326,036
Other revenue	216,884	8,670	83,397	308,951	219,423	10,968	92,627	323,018
Non-revenue and surplus receipts	28,052	2,848	—	30,900	37,620	9,086	—	46,706
Totals, Net General Revenue excluding Inter - government Transfers	**5,395,259**	**1,641,962**	**1,180,034**	**8,217,255**	**5,065,524**	**1,711,089**	**1,293,973**	**8,070,586**
Inter-government Transfers—								
Tax rentals	—	354,354	—	354,354	—	399,100	—	399,100
Share of income tax on power utilities	—	7,261	—	7,261	—	8,483	—	8,483
Subsidies	—	21,996	55,357	77,353	—	60,197	62,885	123,082
Special payments	—	—	1,098	1,098	—	—	1,892	1,892
Grants in lieu of municipal taxes on federal and provincial property	—	—	18,488	18,488	—	—	20,703	20,703
Grand Totals, Net General Revenue	**5,395,259**	**2,025,573**	**1,254,977**	**8,675,809**	**5,065,524**	**2,178,869**	**1,379,453**	**8,623,846**

2.—Combined Expenditure of All Governments, 1957 and 1958

Note.—Figures are for fiscal years ended nearest Dec. 31.

Function	1957				1958			
	Federal	Provincial	Municipal[1]	Total	Federal	Provincial	Municipal[1]	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Defence services and mutual aid	1,705,773	—	—	1,705,773	1,664,313	—	—	1,664,313
Veterans pensions and other benefits	287,674	—	—	287,674	295,388	—	—	295,388
Health, hospital care and other	62,017	302,033	80,965	445,015	129,695	330,257	74,998	534,950
Social Welfare—								
Aid to aged persons	499,034[2]	54,461	..	..	589,594[2]	52,414	..	..
Aid to unemployed and unemployables	19,325	30,132	..	..	39,265	39,793	..	..
Family allowances	440,785	—	—	440,785	477,732	—	—	477,732
National employment services	70,516	—	—	70,516	73,357	—	—	73,357
Other	17,341	83,488	..	..	21,814	99,337	34,260	155,411
Totals, Social Welfare	1,047,001	168,081	31,633	1,246,715	1,201,762	191,544	34,260	1,427,566
Education	97,231	452,276	493,896	1,043,403	64,866	521,782	522,193	1,108,841
Transportation and Communications—								
Highways, roads and bridges	80,559	582,519	296,307	959,385	89,343	616,049	309,602	1,014,994
Other	201,758	5,076	—	206,834	239,981	6,012	—	245,993
Natural resources and primary industries	183,017	146,890	—	329,907	263,309	158,226	—	421,535
Debt charges excluding debt retirement	500,083	54,844	85,052	639,979	545,721	55,351	101,226	702,298
Payments to own government enterprises	129,032	10,050	10,633	149,715	169,741	4,527	11,633	185,901
General government	298,981	83,357	108,365	490,703	261,982	95,444	120,699	478,125
Protection of persons and property	64,744	108,158	172,030	344,932	72,575	116,336	191,594	380,505
Sanitation and waste removal	—	—	116,955	116,955	—	—	116,832	116,832
International co-operation and assistance	52,939	—	—	52,939	62,523	—	—	62,523
Other	345,757	59,676	102,475	507,908	339,050	62,979	112,134	514,163
Non-expense and surplus payments	342	8,994	—	9,336	291	8,253	—	8,544
Totals, Net General Expenditure excluding Inter-government Transfers	**5,056,908**	**1,981,954**	**1,498,311**	**8,537,173**	**5,400,540**	**2,166,760**	**1,595,171**	**9,162,471**
Inter-government Transfers—								
Tax rentals	354,243	—	—	354,243	399,100	—	—	399,100
Share of income tax on power utilities	7,362	—	—	7,362	8,683	—	—	8,683
Subsidies	21,996	53,284	—	75,280	60,197	60,326	—	120,523
Special payments	503	727	—	1,230	1,114	944	—	2,058
Grants in lieu of municipal taxes on federal and provincial property	17,595	1,022	—	18,617	22,004	1,144	—	23,148
Grand Totals, Net General Expenditure	**5,458,607**	**2,036,987**	**1,498,311**	**8,993,905**	**5,891,638**	**2,229,174**	**1,595,171**	**9,715,983**

[1] Excludes capital expenditures out of capital fund for the Province of Quebec. [2] Includes pensions paid from Old Age Security Fund.

Consolidated Debt.—Table 3 gives details of combined debt of all governments for 1957 and 1958 with the aggregate debt of the federal, provincial and municipal governments; the inter-government debt is deducted to arrive at a consolidated government figure.

3.—Consolidated Debt of All Governments, 1957 and 1958

NOTE.—Figures are for fiscal years ended nearest Dec. 31.

Item	1957						1958					
	Federal	Provincial	Municipal	Total	Deduct Intergovernment Debt	Consolidated Government Debt	Federal	Provincial	Municipal	Total	Deduct Intergovernment Debt	Consolidated Government Debt
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Direct Debt—												
Funded debt[1]	12,720,107	3,028,951	2,994,039	18,743,097	214,812	18,528,285	13,979,113	3,454,217	3,408,052	20,841,382	203,920	20,637,462
Less sinking funds	211,741	619,029	106,109	936,879	—	936,879	83,214	668,005	118,681	869,900	—	869,900
Net funded debt	12,508,366	2,409,922	2,887,930	17,806,218	214,812	17,591,406	13,895,899	2,786,212	3,289,371	19,971,482	203,920	19,767,562
Treasury bills[2]	1,525,000	39,700	—	1,564,700	—	1,564,700	1,595,000	26,981	—	1,621,981	—	1,621,981
Savings deposits	34,896	2,256	—	37,152	—	37,152	34,156	[3]	—	34,156	—	34,156
Temporary loans	—	24,470	207,109	231,579	—	231,579	—	26,328	204,608	230,936	—	230,936
Other direct liabilities	3,726,874	306,338	277,458	4,310,670	46,674	4,263,996	4,437,741	338,395	312,802	5,088,938	49,885	5,039,053
Totals, Direct Debt (less sinking funds)	**17,795,136**	**2,782,686**	**3,372,497**	**23,950,319**	**261,486**	**23,688,833**	**19,962,796**	**3,177,916**	**3,806,781**	**26,947,493**	**253,805**	**26,693,688**
Indirect Debt—												
Guaranteed bonds	1,028,407	2,343,756	14,704	3,386,867	115,927	3,270,940	987,907	2,577,266	14,551	3,579,724	152,365	3,427,359
Less sinking funds	—	38,538	231	38,769	2,350	36,419	—	50,523	290	50,813	2,468	48,345
Net guaranteed bonds	1,028,407	2,305,218	14,473	3,348,098	113,577	3,234,521	987,907	2,526,743	14,261	3,528,911	149,897	3,379,014
Loans under the Municipal Improvement Assistance Act, 1938	—	2,352	—	2,352	2,352	—	—	2,098	—	2,098	2,098	—
Guaranteed bank loans and other indirect liabilities	1,632,181[4]	119,234	177	1,751,592	891	1,750,701	2,253,613[4]	152,379	4	2,405,996	3,527	2,402,469
Totals, Indirect Debt (less sinking funds)	**2,660,588**	**2,426,804**	**14,650**	**5,102,042**	**116,820**	**4,985,222**	**3,241,520**	**2,681,220**	**14,265**	**5,937,005**	**155,522**	**5,781,483**
Grand Totals	**20,455,724**	**5,209,490**	**3,387,147**	**29,052,361**	**378,306**	**28,674,055**	**23,204,316**	**5,859,136**	**3,821,046**	**32,884,498**	**409,327**	**32,475,171**

[1] Includes treasury bills having a term of two or more years.

[2] Includes treasury bills having a term of less than two years.

[3] Included in "Other direct liabilities".

[4] Excludes contingent liability in respect of Federal Government guarantee of deposits maintained by chartered banks in the Bank of Canada and miscellaneous guarantees the amounts of which were not finally determined or were indeterminate at the close of the fiscal year.

TAXATION IN CANADA*

Canada is a federal state with a central government and ten provincial governments. In 1867 the principal colonies of the British Crown in North America joined together to form the nucleus of a new nation and the British North America Act of that year became its written constitution. This statute created a central government with certain powers while continuing the existence of political subdivisions called provinces with powers of their own.

Under the British North America Act the Parliament of Canada has the right of raising "money by any mode or system of taxation" while the provincial legislatures are restricted to "direct taxation within the Province in order to the raising of a Revenue for Provincial purposes". Thus the provinces have a right to share only in the field of direct taxation while the Federal Government is not restricted in any way in matters of taxation. The British North America Act also empowered the provincial legislatures to make laws regarding "municipal institutions in the Province". This means that the municipalities derive their incorporation with its associated powers, fiscal and otherwise, from the provincial government concerned. Thus, from a practical standpoint, municipalities are also limited to direct taxation.

A direct tax is generally recognized as one "which is demanded from the very person who it is intended or desired should pay it". In essence, this conception has limited the provincial governments to the imposition of income tax, retail sales tax, succession duties and an assortment of other direct levies. In turn, municipalities, acting under the guidance of provincial legislation, tax real estate, water consumption, places of business and in some cases retail sales. The Federal Government levies direct taxes on income, on gifts, and on the estates of deceased persons and indirect taxes such as excise taxes, excise and customs duties, and a sales tax.

The increasing use by both the federal and provincial governments of their rights in the field of direct taxation in the 1930's resulted in uneconomic duplication and some severe tax levies. Starting in 1941, a series of tax agreements between the federal and provincial governments have been entered into under which the agreeing provinces have undertaken, in return for compensation, not to use or to permit their municipalities to use certain of the direct taxes. As a result of the most recent of these agreements, all provinces except Quebec have undertaken not to impose a personal income tax for the period 1957-62 and all provinces except Ontario and Quebec have undertaken for the same period not to impose taxes on corporations or successions. Consequently, the Province of Quebec is at present the only political subdivision in Canada levying its own personal income tax and Ontario and Quebec are the only jurisdictions imposing corporation income taxes, special corporation taxes and succession duties. (See also pp. 1067-1070.)

The fact that the Provinces of Ontario and Quebec have chosen to continue to impose income taxes and succession duties has not resulted in recent years in taxpayers in those provinces bearing a substantially heavier tax load than taxpayers in other provinces. As part of the current federal-provincial arrangements, the federal income tax and estate tax are abated by certain amounts in those provinces which also impose these taxes.

Federal Taxes

Individual Income Tax

Every individual who is a resident of Canada at any time during a year is liable for the payment of income tax for that year. In addition, every individual who is employed or carries on business in this country during a year is required to pay tax on the part of his taxable income earned in Canada. Canadian taxation practice is based to a large extent on the British experience. This is reflected particularly in the fact that taxation is on the basis of residence rather than citizenship, and in the tax freedom for capital gains. The term "residence" is difficult to define simply but, generally speaking, it is taken to be the place where a person resides or where he maintains a dwelling ready at all times for his use. There are also extensions of the meaning of Canadian resident to include a person who has sojourned in Canada for an aggregate period of 183 days in a taxation year, or a person who was during the year a member of the Armed Forces of Canada, or an ambassador, a high commissioner, or an officer or servant of Canada or of any one of its provinces.

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* Prepared (in February 1961) by F. R. Irwin, Director, Taxation Division, Department of Finance, Ottawa. This article includes federal tax changes announced in the Supplementary Budget on Dec. 20, 1960, and provincial taxation *circa* April 1961; federal tax changes announced in the Budget of June 20, 1961 are outlined at p. 1051.

The Canadian tax law uses the concepts "income" and "taxable income". The income of a resident of Canada for a taxation year comprises his revenues from all sources inside or outside Canada and includes income for the year from all businesses, property, offices and employments. It does not include capital gains unless they arise out of the conduct of a business or as a result of an adventure in the nature of trade.

In computing his income for a taxation year, an individual must include all dividends, fees, annuities, pension benefits, allowances, interest, alimony, maintenance payments and other miscellaneous sources of income. On the other hand, war service disability pensions paid by Canada or an ally of Her Majesty at the time of the war service, unemployment insurance benefits, compensation in respect of an injury or death paid under a Workmen's Compensation Act of a province and family allowances do not have to be included in the computation of income.

In computing his income, an individual who is carrying on business may deduct business expenses including depreciation (called capital cost allowances), interest on borrowed money, reserves for doubtful debts, contributions to employees' pension plans, bad debts, and expenses incurred for scientific research. In general, no deductions are allowed in computing income from salary and wages although there are exceptions—travelling expenses (of the employee who must travel in the performance of his work), union dues, alimony payments and contributions to registered pension plans. An individual may deduct, within limits, amounts set aside to provide future income under a registered retirement savings plan. A student in full-time attendance at a university or other post-secondary school may deduct his tuition fees.

Having computed his income, the individual then calculates his taxable income by deducting certain exemptions and deductions: for single status an exemption of $1,000; for married status an exemption of $2,000; for dependent children eligible for family allowance, $250; for other dependants (as defined in the law), $500; for a taxpayer over 65 years of age, an additional $500; and charitable donations up to 10 p.c. of income. Medical expenses that exceed 3 p.c. of income may be deducted up to a maximum of $2,500 for a single person, $3,000 for a married person, and $750 for each dependant, or a total of $3,000 for all dependants. In lieu of claiming deductions for charitable donations, medical expenses and membership dues in trade unions or professional societies, an individual may claim a standard deduction of $100.

As already stated, an individual who is resident in Canada for the whole year is taxed on his income from both inside and outside Canada. A non-resident who carries on business in Canada or who earns salary or wages in Canada is taxed on income earned in Canada. Such a non-resident may deduct that part of the exemptions and deductions which may reasonably be attributed to the income earned in Canada.* An individual who is resident in Canada for part of the year is subject to income tax in Canada on that part of his income received while he is resident in Canada; he also is permitted that part of the exemptions and deductions which may reasonably be considered as applicable to his period of residence in Canada.

A progressive schedule of rates is applied to taxable income, beginning at 11 p.c. on the first $1,000 of taxable income and increasing to 80 p.c. on taxable income in excess of $400,000. In addition, an old age security tax is levied on taxable income at the rate of 3 p.c. with a maximum of $90 reached at the level of $3,000.

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* A non-resident who derives investment income from Canada is taxed in a different way, described on p. 1042.

In calculating the amount of his income tax, an individual is allowed tax credits under three main headings: (1) *Dividend Tax Credit*—to partially eliminate the double taxation of corporate profits and to encourage participation in the ownership of Canadian companies, a Canadian resident is allowed to deduct from his tax an amount equal to 20 p.c. of the net dividends he receives from Canadian taxable companies; (2) *Foreign Tax Credit*—foreign taxes paid on income from foreign sources may be credited against Canadian income tax but the credit may not exceed the proportion of Canadian tax relative to such income; and (3) *Provincial Tax Credit*—an individual liable for the payment of a provincial income tax may claim an abatement of 13 p.c. of his federal tax otherwise payable on that part of his income subject to the provincial levy.

To a very large extent, individual income tax is payable as the income is earned. A taxpayer in receipt of salary or wages has his tax deducted from his pay by his employer and in this way pays nearly 100 p.c. of his tax liability during the calendar year. The remainder, if any, is payable at the time of filing the tax return before Apr. 30 of the following year. A taxpayer receiving more than 25 p.c. of his income from sources other than salary or wages must pay tax by quarterly instalments throughout the year. His return must also be filed before Apr. 30 of the following calendar year.

The following statement shows what taxpayers pay at various levels of income. In calculating these taxes it has been assumed that all taxpayers take the standard deduction of $100. No allowance has been made for the 20-p.c. dividend tax credit. Also, these taxes apply throughout Canada except in the Province of Quebec. A Quebec taxpayer has his federal tax reduced by 13 p.c. because Quebec also imposes an income tax on individuals.

Status	*Income*	*Income Tax*	*Old Age Security Tax*
	$	$	$
Single taxpayer—no dependants	1,200	11	3
	1,500	44	12
	2,000	99	27
	2,500	166	42
	3,000	236	57
	5,000	591	90
	10,000	1,840	90
	20,000	5,825	90
	50,000	20,965	90
	100,000	50,855	90
Married taxpayer—no dependants	2,200	11	3
	2,500	44	12
	3,000	99	27
	5,000	403	87
	10,000	1,544	90
	20,000	5,375	90
	50,000	20,415	90
	100,000	50,205	90
Married taxpayer—two children eligible for family allowances	2,800	22	6
	3,000	44	12
	5,000	318	72
	10,000	1,414	90
	20,000	5,150	90
	50,000	20,195	90
	100,000	49,880	90

Corporation Income Tax

The Income Tax Act levies a tax upon the income, from everywhere in the world, of corporations resident in Canada and upon the income attributable to operations in Canada of non-resident corporations carrying on business in Canada.

In computing income, a corporation may deduct operating expenses, including municipal real estate taxes, and also reserves for doubtful debts, bad debts and interest on borrowed money. It may not deduct provincial income taxes other than provincial taxes on income derived from mining and logging operations. For this purpose "income from mining operations" and "income from logging operations" are specially defined. Regulations issued under authority of the Income Tax Act permit the deduction of capital cost allowances (depreciation). A corporation engaged in mining or oil and gas production may also deduct depletion allowances.

The regulations covering capital cost allowances permit the taxpayer to deduct over a period of years the actual capital cost of all depreciable property. The yearly deductions of capital cost allowances are computed on the diminishing balance principle (taxpayers engaged in farming and fishing may choose between this and the straight line method). Published regulations establish a number of classes of property and maximum rates. There is provision for recapture of any amount allowed in excess of the ultimate net capital cost of any asset.

A taxpayer operating a mine, oil well or gas well is allowed a depletion allowance, usually computed as a percentage of profits, which continues as long as the mine or well is in operation. This allowance is in addition to capital cost allowances on buildings, machinery and similar depreciable assets used by the taxpayer. In respect of timber limits, the taxpayer receives an annual allowance sometimes called a depletion allowance. This is a rateable proportion of the amount invested in the limit and when that amount has been recovered no further allowance is given.

In computing taxable income, a corporation may deduct dividends received from other Canadian taxpaying corporations and also from foreign corporations in which the Canadian corporation has at least a 25-p.c. stock ownership. Business losses may be carried back one year or forward five years and deducted in computing taxable income. A corporation may also deduct donations to charitable organizations up to a maximum of 10 p.c. of its income.

The general rates of tax on corporate taxable income are 18 p.c. on the first $35,000 of taxable income plus 47 p.c. on taxable income in excess of $35,000. A corporation deriving more than one-half of its gross revenue from the sale of electric energy, gas or steam pays tax on its taxable income from such sources at the rate of 18 p.c. on the first $35,000 of taxable income plus 45 p.c. on taxable income in excess of $35,000.

A corporation that qualifies as an investment company pays a tax of 18 p.c. on its taxable income. In addition, every corporation pays an old age security tax of 3 p.c. of taxable income bringing its rates up to 21 p.c. and 50 p.c. (21 p.c. and 48 p.c. for a public utility company and 21 p.c. for an investment company).

In calculating the amount of income tax, a corporation is allowed tax credits under two headings: (1) *Foreign Tax Credit*—foreign taxes paid on income from foreign sources may be credited against Canadian income tax but the credit may not exceed the proportion of Canadian tax relative to such income; and (2) *Provincial Tax Credit*—a corporation may deduct from its federal tax otherwise payable a tax credit equal to a fixed percentage of its taxable income attributable to operations in a province which imposes its own provincial corporation income tax. Only the Provinces of Ontario and Quebec at present impose their own corporation income tax. The amount of the credit is 9 p.c. of taxable income attributable to operations in Ontario and 10 p.c. of taxable income attributable to operations in Quebec. The higher credit with respect to taxable income earned in Quebec is attributable to a special arrangement whereby federal grants to universities in that province are replaced by provincial grants financed by an additional 1-p.c. tax levied by the province on corporation profits earned in Quebec.

A corporation is required to pay its taxes (combined income and old age security taxes) in monthly instalments. In each of the last six months of its fiscal year and the three months following the end of its fiscal year, it must pay one-twelfth of its estimated tax for the year. The estimate of the amount payable may be based on the taxable income of the previous year or the estimated taxable income of the year in progress. In each of the following two months, it pays one-third of the estimated balance of the tax computed by reference to the income of the taxation year. In the sixth month following the end of the fiscal year, the final return must be filed and the remainder of the tax paid for that year.

Taxation of Non-residents

A non-resident is liable to the payment of income tax if he was employed or was carrying on business in Canada during a taxation year. The expression "carrying on business in Canada" includes maintaining a permanent establishment in Canada, processing goods even partially in Canada, and entering into contracts in Canada.

The taxable income of a non-resident individual is taxed under the same schedule of rates as Canadian resident individuals. Non-resident corporations deriving income from carrying on business in Canada are taxed on their taxable income attributable to operations in Canada at the same corporation income tax rates as Canadian resident corporations. In addition, the profits remaining after subtracting the federal and provincial corporation income taxes and an allowance in respect of net capital investment in property in Canada during the year are subject to a special 15-p.c. tax commencing Jan. 1, 1961. (Tax treaties with some countries provide certain exemptions from tax for remuneration for services performed in this country by residents or employees of the other country.)

Furthermore, the Income Tax Act provides for a tax at the rate of 15 p.c. on certain forms of income going from Canada to non-resident persons or corporations. It applies to interest, dividends, rentals, royalties, income from a trust or estate, and alimony. This 15-p.c. tax applies whether the income goes to non-resident individuals or corporations. (The rate on royalties on motion picture films is 10 p.c.) This tax is withheld at the source by the Canadian payer. It is an impersonal tax levied without regard to the status or other income of the non-resident recipient. Non-residents who receive only this kind of income from Canada do not file tax returns in Canada.

Gift Tax

The Income Tax Act levies a tax upon gifts. The rates range from 10 p.c. on an aggregate taxable value of $5,000 or under, to 28 p.c. on an aggregate taxable value of over $1,000,000. Exemptions include complete exemption of gifts of $1,000 or less and a general deduction of $4,000 from aggregate taxable value of gifts in the year.

Estate Tax

This tax applies to property passing, or deemed to pass, at death. All the property of persons who were domiciled in Canada before their death must be taken into consideration no matter where that property is situated; for persons dying domiciled outside of Canada, only their property situated in Canada is subject to tax.

In computing the tax of a Canadian domiciliary, the value of the whole estate is first determined. Once the aggregate value of the estate has been determined, estate debts and certain expenses may be deducted. From the resulting "aggregate net value" there may be deducted the amount of a basic exemption, which is increased where the deceased leaves a widow or dependent child, and also the amount of any charitable bequests to charitable organizations in Canada. After these deductions the amount left is the "aggregate taxable value" to which is applied the tax rates. From the tax so calculated may be deducted: (1) a tax abatement in respect of property situated in a province that levies a succession duty; (2) a credit for gift tax paid on recent gifts the amount of which is included in the aggregate net value of the estate; and (3) a credit for foreign taxes.

No estate valued at less than $50,000 is subject to estate tax. This $50,000 is not an exemption but it is the starting point for tax. The estate tax must not reduce the value of an estate after tax to less than $50,000. The basic deductible exemption which applies to all estates of Canadian domiciliaries is $40,000. This basic exemption of $40,000 is increased to $60,000 in respect of a deceased male survived by a spouse, or in respect of a deceased female survived by an incapacitated spouse and a dependent child. In both cases, there is an additional exemption of $10,000 for each surviving dependent child (under 21). Finally, the basic exemption of $40,000 is increased by $15,000 for every surviving dependent child orphaned by the death of the deceased.

The tax on the estates of Canadian domiciliaries is calculated by applying a graduated scale of rates. For an aggregate taxable value of $5,000 or less, the rate is 10 p.c. For an aggregate taxable value of $100,000, the basic amount is $19,000 plus 24 p.c. of any amount between $100,000 and $150,000. At $2,000,000 of taxable value, the tax is $816,500 and the excess over $2,000,000 is chargeable at the highest rate of 54 p.c. A complete rate schedule is given in Sect. 8 of the Act.

As already stated, there is an abatement from federal estate taxes otherwise payable, in respect of provincial succession duties. Generally, the abatement is a deduction of 50 p.c. from the federal tax otherwise payable in respect of property situated in a province that levies succession duties.

The property situated in Canada of a deceased person not domiciled in Canada is subject to estate tax at a flat rate of 15 p.c. There is no deduction allowed against the assessed value of such property except for debts specifically chargeable to it. However, there is a special provision which exempts all such property of less than $5,000 value and which also provides that the value of the property is not reduced by the tax to less than $5,000. The 50-p.c. abatement referred to above also applies to this tax on property of deceased persons not domiciled in Canada where that property is subject to provincial duties.

Excise Taxes

The Excise Tax Act levies a general sales tax and special excise taxes, both of which are levied on goods imported into Canada and on goods produced in Canada. They are not levied on goods exported.

General Sales Tax.—An 8-p.c. sales tax is levied on the manufacturer's sale price of goods produced or manufactured in Canada or on the duty-paid value of goods imported into Canada. (For alcoholic beverages and tobacco products, the sale price for purposes of the sales tax includes excise duties levied under the Excise Act.) An old age security tax of 3 p.c. is levied on the same basis as the 8-p.c. tax bringing the total sales tax to 11 p.c.

Many classes of goods are exempt from sales tax. One important category is comprised of machinery and apparatus used in the process or manufacture or production of goods. The equipment to be exempt must enter directly into production. To illustrate, a stamping or cutting machine used in a factory is exempt from sales tax while office equipment or delivery equipment used by the same manufacturer is not. This exemption was established to reduce to a minimum the effect of the tax as a cost of production. Similarly, most equipment used by farmers, fishermen, loggers and mining companies is also exempt. Most building materials, foodstuffs, and fuels for lighting or heating are exempt from the tax as well as articles and materials used by public hospitals. The products of farms, forests, mines and fisheries are to a large extent exempt. Finally a variety of items is made exempt from sales tax when purchased by municipalities for prescribed uses. These and other exemptions are set forth in schedules to the Excise Tax Act.

Special Excise Taxes.—The Excise Tax Act also provides for a number of special excise taxes which are in addition to the sales tax. Where these are *ad valorem* taxes they are levied on exactly the same price or duty-paid value as the general sales tax. Articles subject to special excise taxes include automobiles, jewellery, cosmetics, toilet articles, radios, record players and television sets. Tobacco products and wines are also taxed under the Excise Tax Act.

Special excise taxes now levied are listed as follows:—

Automobiles, for passenger use	7½ p.c. ad valorem
Cigarettes	2½ cents per 5 cigs.
Cigars	15 p.c. ad valorem
Jewellery, including clocks, watches, jewellery, articles of ivory, amber, shell, precious or semi-precious stones, goldsmiths' and silversmiths' products except gold-plated or silver-plated ware for the preparation or serving of food or drink	10 p.c. ad valorem
Lighters	10 p.c. ad valorem
Playing cards	20 cents per pack
Radios, phonographs, television sets and tubes	15 p.c. ad valorem
Slot machines—coin, disc, or token operated games or amusement devices	10 p.c. ad valorem
Matches	10 p.c. ad valorem
Tobacco—pipe tobacco, cut tobacco and snuff	80 cents per lb.
Tobacco pipes, cigar and cigarette holders and cigarette rolling devices	10 p.c. ad valorem
Toilet articles, including cosmetics, perfumes, shaving creams, antiseptics, etc.	10 p.c. ad valorem
Wines—*	
Wines of all kinds containing not more than 7 p.c. of absolute alcohol by volume	25 cents per gal.
Non-sparkling wines containing more than 7 p.c. absolute alcohol by volume but not more than 40 p.c. proof spirit	50 cents per gal.
Sparkling wines	$2.50 per gal.
Premiums of British or foreign insurance companies not authorized to transact business in Canada (not including marine insurance)	10 p.c. of net premium.

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* These taxes apply only to wines manufactured in Canada. The customs tariff on imported wines includes a levy to correspond to these taxes on domestic production.

All the above items, with the exception of premiums of insurance companies, are also subject to the general sales tax of 8 p.c. and the old age security tax of 3 p.c. Cigarettes, cigars and tobacco are subject to further taxes under the Excise Act (referred to as excise duties).

Excise Duties

The Excise Act levies taxes (referred to as excise duties) upon alcohol, alcoholic beverages and tobacco products produced in Canada. These duties are not levied on imported goods but the customs tariff on these products includes a levy to correspond to the duties levied on domestic production. These duties are not levied on goods exported.

Spirits.—The duties are on a per-gallon basis in proportion to the strength of proof of the spirits. These duties do not apply to denatured alcohol intended for use in the arts and industries, or for fuel, light or power, or any mechanical purpose. The various duties are as follows:—

On every gallon of the strength of proof distilled in Canada	$13.00
On every gallon of the strength of proof used in the manufacture of—	
Medicines, extracts, pharmaceutical preparations, etc., per gallon	$ 1.50
Approved chemical compositions, per gallon	15 cents
Spirits sold to a druggist and used in the preparation of prescriptions, per gallon	$ 1.50
Imported spirits when taken into a bonded manufactory in addition to other duties, per gallon	30 cents.

Canadian Brandy.—Canadian brandy is a spirit distilled exclusively from juices of native fruits without the addition of sweetening materials. It is subject to a duty of $11 per gallon.

Beer.—All beer or other malt liquor is subject to a duty of 38 cents per gallon.

Tobacco, Cigars and Cigarettes.—The excise duties make up nearly as large a part of the total tax on tobacco products as the special excise taxes described on pp. 1043-1044. The rates of duty are as follows:—

On manufactured tobacco of all descriptions, except cigarettes, per pound	35 cents
Cigarettes weighing not more than two and one-half pounds per thousand (nearly all of the cigarettes used in Canada are of this type), per thousand	$ 4.00
Cigarettes weighing more than two and one-half pounds per thousand, per thousand	$ 5.00
Cigars, per thousand	$ 2.00
Canadian raw leaf tobacco when sold for consumption, per pound	10 cents.

Combined Effect of Excise Taxes and Excise Duties on Tobacco Products

Bringing together the taxes imposed on tobacco products under the Excise Tax Act and the duties imposed under the Excise Act gives the following total taxes:—

Cigarettes	$9.00 per thousand (or 18 cents per pack of 20 cigarettes) plus the 11-p.c. sales tax on the manufacturer's sale price
Manufactured tobacco	$1.15 per pound plus the 11-p.c. sales tax on the manufacturer's sale price
Cigars	$2.00 per 1,000 plus the 15-p.c. special excise tax and the 11 p.c. sales tax on the manufacturer's sale price.

Customs Duties*

Most goods imported into Canada are subject to customs duties at various rates as provided by tariff schedules. Customs duties, once the chief source of revenue for the country, have declined in importance to the point where they now provide about 10 p.c. of the total. Quite apart from its revenue aspects, however, the Tariff still occupies an important place as an instrument of economic policy.

The Canadian Tariff consists mainly of three sets of rates—British Preferential, Most-Favoured-Nation and General. The British Preferential rates are, with some exceptions, the lowest rates. They are applied to imported dutiable commodities shipped directly to Canada from countries within the British Commonwealth. Special rates lower than the ordinary preferential duty are applied on certain goods imported from designated Commonwealth countries.

The Most-Favoured-Nation rates apply to goods from countries that have been accorded tariff treatment more favourable than the General Tariff but are not entitled to the British Preferential rate. Canada has Most-Favoured-Nation arrangements with almost every country outside the Commonwealth. The most important agreement providing for the exchange of Most-Favoured-Nation treatment is the General Agreement on Tariffs and Trade.

The General Tariff applies to imports from countries not entitled to either the British Preferential or Most-Favoured-Nation treatment. Few countries are in this category and, in terms of trade coverage, are negligible.

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* See also pp. 1024-1025.

Where the tariff applies there are provisions for drawbacks of duty on imports of materials used in the manufacture of products later exported. The purpose of these drawbacks is to assist Canadian manufacturers to compete with foreign manufacturers of similar goods. There is a second class of drawbacks known as "home consumption" drawbacks. These apply to imported materials used in the production of specified classes of goods manufactured for home consumption.

The tariff schedules are too lengthy and complicated to be summarized here but the rates that apply on any particular item may be obtained from the Department of National Revenue, which is responsible for administering the Customs Tariff.

Provincial Taxes

All of Canada's ten provinces impose a wide variety of taxes to raise the revenue necessary for provincial purposes. As previously mentioned, only the Provinces of Ontario and Quebec impose income taxes and special taxes on corporations and they also are the only provinces taxing property passing on death. Only the Province of Quebec imposes a personal income tax. The provinces that do not impose these direct taxes receive payments from the Federal Government to compensate them for sharing these tax fields. In addition, there is an arrangement under which the Federal Government makes payments to all the provinces except Ontario in recognition of the fact that the potential tax revenue from the fields of income tax and succession duties in those provinces, measured on a per capita basis, is lower than an agreed-upon level. Some of the more important provincial levies are reviewed briefly below.

Alcoholic Beverage Taxes

Generally speaking, the sale of spirits in all provinces is made through provincial agencies operating as boards or commissions which exercise monopolistic control over this commodity. The provincial mark-up over the manufacturer's price is the effective means of taxation. Beer and wine may be sold by retailers or government stores depending on the province but in all cases they bear a provincial tax.

Retail Sales Taxes

Retail sales taxes are levied on the final purchaser or user and are collected by the retailer. Seven provinces—Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Saskatchewan and British Columbia—now (April 1961) levy this type of tax at rates varying between 2 p.c. and 5 p.c. Ontario has announced its intention of imposing a retail sales tax of 3 p.c. commencing Sept. 1, 1961.

Amusement Taxes

Each of the provinces, with the exception of Alberta and Saskatchewan, has a tax on admission to places of entertainment. In addition, there is generally a licence fee imposed on the operator or owner of these amusement places. The tax on admissions is within the range of 5 p.c. to 13 p.c. Alberta imposes a pari-mutuel tax of 5 p.c.

Gasoline and Diesel Fuel Oil Taxes

Each of the ten provinces has imposed a tax on the purchase of gasoline by motorists and truckers. The rates vary from 12 cents per gallon in Alberta to 19 cents in Nova Scotia and Newfoundland. The diesel commercial road tax varies from 14 cents per gallon in Alberta to 24 cents in Nova Scotia. Ontario imposes a tax of 13 cents on gasoline and

18½ cents on diesel fuel, Saskatchewan a tax of 14 cents on gasoline and 17 cents on diesel fuel, and Alberta a tax of 12 cents on gasoline and 14 cents on diesel fuel. No provincial taxes are imposed on fuel oil for heating purposes.

Motor Vehicle Licences and Fees

Each province levies a fee on the annual registration of motor vehicles. This registration is compulsory and each vehicle is issued with licence plates for the year. The rates of this fee vary from province to province; the amount to be paid may be assessed in relation to the weight of the car, the number of cylinders of the engine, the wheel base, or at a flat rate. The operator or the driver of a motor vehicle must also register annually and pay a fee for a new driver's licence; in Alberta, drivers' licences must be renewed every five years at a cost of $5.

Taxes on Mining Operations

Seven of the ten provinces levy a tax on the income from mining operations of individuals, partnerships, associations or corporations engaged in this activity. The rates are as follows:—

Newfoundland	20 p.c. on iron ore; 5 p.c. on all other
New Brunswick	7 p.c. on excess over $10,000; 9 p.c. on excess over $5,000,000
Quebec	4 p.c. on excess over $10,000; 7 p.c. on excess over $3,000,000
Ontario	6 p.c. on excess over $10,000; 11 p.c. on excess over $1,000,000; 12 p.c. on excess over $5,000,000
Manitoba	8 p.c. on excess over $10,000
Saskatchewan	12½ p.c. on all mining operations after a three-year royalty-free period
British Columbia	10 p.c. on excess over $25,000.

The Province of Nova Scotia imposes a tax on income from gypsum mining and the Provinces of Saskatchewan, Manitoba and Newfoundland impose a tax on the assessed value of minerals and a flat rate per acre of land. Alberta levies a tax on the assessed value of minerals in producing areas and a small acreage tax on freehold minerals.

Taxes on Logging Operations

The Provinces of British Columbia and Ontario levy a tax on the income from logging operations of individuals, partnerships, associations or corporations engaged in this activity. In British Columbia the tax is 10 p.c. on income in excess of $25,000 and in Ontario the rate is 9 p.c. on income in excess of $10,000.

Capital Taxes

The Province of Quebec imposes a tax of 1/10th of 1 p.c. on paid-up capital of corporations while Ontario levies a similar tax at the rate of 1/20th of 1 p.c.

Place-of-Business Taxes

The Provinces of Quebec and Ontario have a place-of-business tax. In Quebec the tax ranges from $20 to $50 for each place of business with the higher amounts being levied in the cities of Montreal and Quebec. In Ontario, the tax for each permanent establishment is the lesser of $50 or 1/20th of 1 p.c. of paid-up capital of the corporation involved, but the total of the capital tax and the place-of-business tax cannot be less than $20. Ontario also imposes an office tax of $50 on every corporation that does not maintain a permanent establishment in the province but merely maintains a buying office, or merely holds certain provincial licences, or merely holds assets, or is represented by a resident employee or agent who is not deemed to operate a permanent establishment of the corporation.

Both provinces levy special taxes on certain kinds of companies such as banks, railway companies, express companies, trust companies and sleeping-car, parlour-car and dining-car companies. In Ontario these special taxes and the capital and place-of-business taxes mentioned above are payable only to the extent that they exceed the corporate income tax otherwise payable.

Land Transfer Taxes

The Provinces of Alberta and Ontario levy a tax based on the price at which ownership to land is transferred. In Alberta the rate is 1/5th of 1 p.c. up to $5,000 and 1/10th of 1 p.c. over $5,000; in Ontario a straight 1/5th of 1 p.c. tax is imposed. In Alberta the tax is in the form of a registration fee and, in addition, an assurance fee of 25 cents per $1,000 is charged. In Quebec a tax of 2½ p.c. of the purchase price is imposed only when property is transferred under the Bankruptcy or Winding-Up Acts.

The Provinces of British Columbia, Saskatchewan and Manitoba do not have a land transfer tax but have an equivalent in the land title fees which are based on land values.

Taxes on Security Transfers

The Provinces of Ontario and Quebec levy a tax on the sale price of securities transferred; the rates in both provinces are:—

Shares sold, transferred or assigned, valued at—	
Under $1	1/10th of 1 p.c. of value
$ 1 to $ 5	1/4 cent per share
$ 5 to $ 25	1 cent per share
$25 to $ 50	2 cents per share
$50 to $ 75	3 cents per share
$75 to $150	4 cents per share
Over $150	4 cents per share plus 1/10th of 1 p.c. of value in excess of $150
Bonds and debentures	3 cents for every $100 or fraction thereof of par value.

Taxes on Premium Income of Insurance Companies

All ten provinces impose a tax of 2 p.c. on the premium income of insurance companies derived from business transacted within the province.

Corporation Income Taxes

Only the Provinces of Ontario and Quebec levy corporation income taxes. The Province of Ontario imposes a tax of 11 p.c. on taxable income earned in Ontario. Under the Corporation Tax Act of Ontario, the determination of taxable income and the allocation of taxable income between Ontario and other jurisdictions follow the federal rule which gives equal weight to sales made and wages paid within the province.

Corporations that maintain an office or carry on business in the Province of Quebec are liable to a provincial tax at the rate of 12 p.c. on taxable income attributable to operations in the province. Effective Jan. 1, 1961, where a corporation operates both inside and outside Quebec, the allocation of corporate income to operations in Quebec is based on the sales–salaries and wages formula applicable under the Ontario Act, so that, generally speaking, the effect of corporation income tax allocation is now the same throughout the country. In general, taxable income in Quebec is computed in a manner similar to that for federal taxable income.

Succession Duties

Only the Provinces of Ontario and Quebec levy succession duties, which constitute a tax upon the right to succeed to property and are assessed upon the interest or benefit passing at death to an heir or beneficiary.

Both Ontario and Quebec impose succession duties on all property situated in the province belonging to the deceased and passing at his death whether the deceased was domiciled in the province or elsewhere. Personal property wherever situated of a person dying domiciled within the province is also liable if passing to a successor resident or domiciled in the province.

The rates of succession duty are governed by the value of the estate, the relationship of the beneficiary to the deceased and the amount going to any one person. The rate of tax increases as the degree of relationship between the deceased and his successor becomes more remote.

Personal Income Taxes

Only the Province of Quebec imposes a personal income tax. Residents of Quebec are liable to tax on their income from all sources. Non-residents of the province who are employed or carrying on business therein are liable for tax on that portion of their income earned in the province. The personal exemptions are: single individual, $1,000; married, no children, $2,000; each child under 16 years of age, $250; all other dependants, $500 each.

The Quebec Income Tax Act is closely patterned after the federal Income Tax Act. It contains similar provisions regarding dividend tax credits, medical expenses and charitable donations. Like its federal counterpart, it uses a graduated rate scale. From 2.5 p.c. on the first $1,000 of taxable income, the rates increase to a maximum of 13.2 p.c. on the excess over $400,000.

Provincial Property Taxes

In unorganized (non-municipal) areas, British Columbia levies property taxes, at varing rates according to class, for provincial revenue. Improved, forest and tree-farm lands are taxed at 1 p.c. of assessed value; farm land at ½ of 1 p.c.; wild land at 3 p.c.; coal land at 2 p.c. (non-operating) or 7 p.c. (operating); and timber land at 1½ p.c.

Municipal Taxation

The municipalities in Canada levy taxes on the owners of property situated within their jurisdiction according to the assessed value of such property. Methods of determining assessed value vary widely but for taxation purposes it is generally considered to be a percentage of the actual value. The revenues from such taxes are used to pay for street maintenance, schools, police and fire protection and other community services. Special levies are sometimes made on the basis of street frontage to pay for local improvements to the property such as sidewalks, roads and sewers. Not only is there a widespread difference in the bases used for property tax but there is also a wide variety of rates applied depending on the municipality.

In addition, municipalities usually impose a charge for the water consumption of each property holder or a water tax based upon the rental value of the property occupied. There are no municipal income taxes although certain localities have retained the use of a poll tax. In Newfoundland, Quebec and Saskatchewan, municipalities are empowered to levy an amusement tax on the admission of persons to places of amusement. This practice differs from that of the other provinces where the amusement tax is generally a provincial preserve. Electricity and gas are taxed at the consumer level in some western municipalities while coal and fuel oil for heating purposes are chargeable in urban areas of Newfoundland. Telephone subscribers are subject to a special levy in Montreal while certain Ontario municipalities impose a tax on the gross receipts of telephone companies.

In most municipalities, a tax is levied directly on the tenant or the operator of a business. In general, business tax rates are lower than those applying to property. Three bases of assessment are in use—a fraction of the property assessment, the annual rental value of the premises, or the area of the premises. Certain municipalities may charge a licence fee instead of a business tax while others will charge both a licence fee and a business tax.

Miscellaneous Levies

The levies described below are not generally referred to as taxes but they are similar to taxes in many ways.

Unemployment Insurance

For the past two decades, a national program of unemployment insurance has been in operation in Canada. Essentially, it provides relief to those qualified persons who temporarily find themselves without work. It is administered by a federal commission appointed for this purpose and financed by equal contributions from employers and employees plus a contribution from the Federal Government. The amount paid into the fund by employee and employer is directly proportional to the weekly wages of the employee. The rates of contribution, together with statistics on the operation of the program, are given at pp. 756-761.

Workmen's Compensation

Legislation in force in all provinces provides compensation for personal injury suffered by workmen as a result of industrial accidents. In general, these provincial statutes establish an accident fund administered by a board to which employers are required to contribute at a rate proportional with the hazards of the industry. See also pp. 765-767.

Hospital Insurance

A federal-provincial hospital insurance plan has now been adopted by the ten Canadian provinces. Under this arrangement, the Federal Government pays approximately one-half of the cost of hospitalization for patients who are participants under the plan. The provinces meet the rest of the cost. Provincial revenues for this purpose are raised by various means. The Province of Quebec has increased its personal and corporation income tax. Certain provinces require the deduction of a monthly premium from the wages of their residents as a contribution or premium for the plan. In such provinces non-salaried people must also pay the premium directly if they wish to be covered by the plan. In some other provinces the proceeds of a retail sales tax are earmarked in whole or in part for the support of the hospital plan. See also pp. 239-240.

Section 2.—Federal Public Finance

Subsection 1 of this Section contains tables dealing with statistics of the Federal Government prepared as far as possible in accordance with the classifications, concepts and definitions used in the preparation of provincial and municipal finance statistics. These tables differ from the information presented in Subsection 2 in that the latter has been extracted directly from the *Public Accounts*. Detailed reports published by the Dominion Bureau of Statistics provide reconciliations of revenue, expenditure and debt as set out in Subsections 1 and 2. The *Public Accounts* presentation is retained for continuity and also because there is interest in and use for information on this basis.

Historical Data.—A sketch of public finance from the French régime to the outbreak of World War I appears in the 1941 Year Book, pp. 742-743. Detailed sketches *re* tax changes from 1914 to 1938 will be found in issues of the Year Book beginning with the 1926 edition. An outline of the financing of Canada's war effort, including the more important changes in taxation during the war years from 1939 to 1945, is given in the 1945

Year Book, pp. 918-923. The postwar financial policy of the Government of Canada is outlined in the 1954 Year Book at pp. 1061-1064, and tax changes proposed in subsequent Budgets are outlined briefly in the respective Year Books.

The 1960-61 Supplementary Budget.—The Budget presented Dec. 20, 1960 to the fourth session of the 24th Parliament did not change the personal income tax rates, but the portion of corporation income subject to the 21-p.c. tax rate was changed from the first $25,000 to the first $35,000. The rate on the remainder continued at 50 p.c. The 4-p.c. surtax on investment income was repealed and the principal withholding taxes on interest and dividends paid to non-residents were raised to a uniform level of 15 p.c. A special 15-p.c. tax was made applicable to profits of Canadian branches of non-resident corporations.

The 1961-62 Budget.—This Budget was presented to the fourth session of the 24th Parliament on June 20, 1961. There were no changes in personal or corporation income tax rates, but the excise tax of 7½ p.c. on passenger cars was repealed. The maximum limits on allowable medical expenses for personal income tax purposes were removed, effective Jan. 1, 1961. Although there were no changes in the taxes on tobacco, cigarette manufacturers will be allowed to increase the amount of tobacco in each cigarette without becoming liable for a higher tax, effective Jan. 1, 1962.

The Minister of Finance announced that the Government would use the foreign exchange fund to lower the value of the Canadian dollar in terms of U.S. currency in an effort to reduce imports and encourage exports of Canadian goods abroad. Other proposals to stimulate the Canadian economy included expansion of the scope and lending capacity of the Industrial Development Bank to provide more credit for small and medium-sized businesses, and permission for companies to write off in a single year, instead of three, their capital expenditures on provision of industrial research facilities.

Subsection 1.—DBS Statistics of Federal Public Finance

Revenue and Expenditure.—Table 4 shows details of net general revenue of the Federal Government for the years ended Mar. 31, 1958 and 1959.

4.—Details of Net General Revenue of the Federal Government, Years Ended Mar. 31, 1958 and 1959

Source	1958	1959
	$'000	$'000
Taxes—		
Income—		
Corporations[1]	1,295,471	1,075,878
Individuals[1]	1,634,789	1,499,849
Interest, dividends and other income going abroad	64,334	61,213
General sales[1]	878,962	868,114
Excise Duties and Special Excise Taxes—		
Alcoholic beverages	171,679	179,264
Tobacco	273,586	288,581
Automobiles	72,331	59,308
Other	31,365	29,735
Customs import duties	498,069	486,508
Succession duties	71,608	72,535
Other	1,498	1,213
Totals, Taxes	4,993,692	4,622,198
Privileges, Licences and Permits—		
Natural resources	4,280	10,878
Other	16,946	18,571
Sales and services other than institutional	57,291	56,910
Fines and penalties	1,603	1,216
Exchange fund profits	22,880	18,626
Receipts from government enterprises	78,114	99,924
Bullion and coinage	5,060	4,518
Postal service	177,493	183,380
Other revenue	9,848	11,683
Non-revenue and surplus receipts	28,052	37,620
Totals, Net General Revenue	**5,395,259**	**5,065,524**

[1] Includes old age security taxes.

Table 5 gives details of expenditure by function for the years ended Mar. 31, 1958 and 1959 and Table 6 shows the amounts paid by the Federal Government to provincial governments and municipal corporations in the year ended Mar. 31, 1959.

5.—Details of Net General Expenditure of the Federal Government, Years Ended Mar. 31, 1958 and 1959

Function	1958	1959
	$'000	$'000
Defence services and mutual aid	1,706,123	1,665,274
Veterans' pensions and other benefits	287,674	295,388
General Government—		
Executive and administrative	269,812	241,628
Legislative	21,142	11,438
Research, planning and statistics	8,027	8,916
Totals, General Government	298,981	261,982
Protection of Persons and Property—		
Law enforcement	6,576	6,969
Corrections	11,971	16,008
Police protection	39,898	42,460
Other	6,299	7,138
Totals, Protection of Persons and Property	64,744	72,575
Transportation—		
Air	55,412	77,943
Road	80,559	89,343
Rail	24,177	22,782
Water	96,114	111,336
Other	2,048	2,258
Totals, Transportation	258,310	303,662
Communications — telephone, telegraph and wireless	24,007	25,662
Health—		
General	2,655	2,707
Public	29,877	33,060
Medical, dental and allied services	5,233	5,082
Hospital care	24,252	88,846
Totals, Health	62,017	129,695
Social Welfare—		
Aid to aged persons[1]	499,034	589,594
Aid to blind persons	3,635	4,295
Aid to unemployed employables and unemployables	19,325	39,265
Family allowances	440,785	477,732
Labour	2,644	2,707
National employment services	70,516	73,357
Other	11,062	14,812
Totals, Social Welfare	1,047,001	1,201,762
Recreational and Cultural Services—		
Archives, art galleries, museums and libraries	1,913	1,956
Parks	8,307	13,089
Other	56,728[3]	7,065
Totals, Recreational and Cultural Services	66,948	22,110
Education—		
Indian and Eskimo schools	24,259	29,753
Universities, colleges and other schools	71,114[2]	33,434
Other	1,858	1,679
Totals, Education	97,231	64,866
Natural Resources and Primary Industries—		
Fish and game	17,159	18,681
Forests	12,077	11,078
Lands, settlement and agriculture	108,080	174,542
Minerals and mines	29,893	34,187
Water resources	1,516	1,498
Other	14,292	23,323
Totals, Natural Resources and Primary Industries	183,017	263,309
Trade and industrial development	10,437	10,103
National Capital area planning and development	5,987	9,561
Loss on foreign exchange	−1,353	−1,058
Debt Charges (excluding debt retirement)—		
Interest	471,838	504,311
Other	28,245	41,410
Totals, Debt Charges (excluding debt retirement)	500,083	545,721
Payments to government enterprises	129,032	169,741
Payments to Provincial Governments—		
Tax-sharing arrangements	354,243	399,100
Share of income tax on power utilities	7,362	8,683
Subsidies	21,996	60,197
Grants to Municipal Governments in lieu of taxes	17,574	22,004
Totals, Payments to Provincial and Municipal Governments[4]	401,175	489,984
Citizenship and immigration	26,359	17,877
External affairs	14,531	15,580
International co-operation and assistance	52,939	62,523
Housing research and slum clearance	1,767	4,266
Civil defence	3,976	3,816
Postal service	177,880	183,536
Royal Canadian Mint	1,286	1,265
Other	38,113	72,147
Non-expense and Surplus Payments	342	291
Totals, Net General Expenditure	**5,458,607**	**5,891,638**

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[1] Includes pensions paid from the Old Age Security Fund.

[2] Includes grant to the Canada Council of $50,000 to establish an Endowment Fund.

[3] Includes grant to the Canada Council of $50,000 to establish a University Capital Grants Fund.

[4] Unconditional payments; grants for specific purposes are classified by function.

6.—Payments by the Federal Government to Provincial Governments and Municipal Corporations, Year Ended Mar. 31, 1959

Payee and Purpose	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	All Provinces	Yukon	N.W.T.	Canada
Provincial Governments	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Tax-sharing arrangements	16,892	4,277	27,399	22,264	55,004	93,322	33,577	34,261	46,341	64,816	398,153	422	525	399,100
Share of income tax on power utilities	286	49	460	202	2,281	1,590	47	96	2,216	1,456	8,683	—	—	8,683
Subsidies	23,669	3,157	9,557	9,179	3,242	3,641	2,032	2,080	2,274	1,281	60,112	40	45	60,197
Grants-in-Aid and Shared-Cost Contributions—														
Trans-Canada Highway	4,753	535	2,474	11,353	—	15,913	1,814	168	2,229	11,891	51,130	—	—	51,130
Other transportation	—	—	460	329	438	666	6	948	—	1,443	4,290	—	—	4,290
Health—														
Hospital insurance and diagnostic services	2,858	—	1,573	—	—	13,140	7,148	8,430	8,775	12,784	54,708	—	—	54,708
General Health Grants—														
Hospital construction	67	142	320	448	6,915	4,245	712	1,202	1,139	1,637	16,827	—	—	16,827
General public health	259	78	368	272	1,659	2,146	489	437	617	872	7,197	—	35	7,232
Tuberculosis control	116	48	188	165	1,499	817	195	210	230	273	3,741	35	6	3,782
Mental health	204	67	306	262	2,071	2,003	336	402	541	603	6,795	—	—	6,795
Cancer control	15	12	152	123	1,026	1,182	175	191	252	246	3,374	—	5	3,379
Laboratory and radiological services	131	49	340	283	1,379	62	246	281	493	250	3,514	—	—	3,514
Other general health grants	93	40	235	179	1,325	1,293	260	278	248	362	4,313	—	17	4,330
Other health	2	2	12	7	66	34	6	5	7	7	148	—	—	148
Old age assistance	1,715	192	1,611	1,829	10,593	6,707	1,573	1,763	1,877	2,292	30,152	13	40	30,205
Disabled persons' allowances	302	169	663	552	8,363	3,486	381	406	516	490	15,328	—	3	15,331
Unemployment assistance	3,041	68	298	181	—	9,325	1,604	1,421	1,859	6,137	23,934	—	—	23,934
Other social welfare	208	46	390	372	1,501	1,068	233	323	240	277	4,658	2	13	4,673
Vocational training	183	110	488	359	—	3,066	314	445	1,646	973	7,584	7	63	7,654
Other education	194	—	7	—	2	198	15	7	6	44	473	190	—	663
Forests	111	19	87	535	—	1,573	317	270	338	1,067	4,317	—	—	4,317
Lands—settlement and agriculture	171	56	127	93	783	91	156	186	69	132	1,864	—	—	1,864
Other natural resources	—	—	—	—	109	428	53	45	—	315	950	—	—	950
Other	79	3	78	146	—	1,400	231	145	274	703	3,059	—	—	3,059
Totals, Grants-in-Aid, etc.	14,502	1,636	10,177	17,488	37,729	68,843	16,264	17,563	21,356	42,798	248,356	247	182	248,785
Totals, Paid to Provincial Governments	**55,349**	**9,119**	**47,593**	**49,133**	**98,256**	**167,396**	**51,920**	**54,000**	**72,187**	**110,351**	**715,304**	**709**	**752**	**716,765**
Municipal Corporations														
Grants in lieu of taxes on federal property	133	89	1,922	926	2,769	9,821	1,545	726	1,676	2,245	21,852	132	20	22,004
Special grants	—	—	—	961	—	274	—	—	—	—	1,235	—	—	1,235
Grants-in-Aid and Shared-Cost Contributions—														
Transportation	—	—	2	49	199	1,944	4	101	453	20	2,772	—	—	2,772
Health	—	—	—	—	—	256	—	—	—	98	354	—	—	354
Schools operated by local authorities	—	40	—	—	24	59	—	69	1	378	571	—	—	571
Other	—	—	144	—	2,469	755	—	—	—	24	3,392	—	—	3,392
Totals, Paid to Municipal Corporations	**133**	**129**	**2,068**	**1,936**	**5,461**	**13,109**	**1,549**	**896**	**2,130**	**2,765**	**30,176**	**132**	**20**	**30,328**
Grand Totals	**55,482**	**9,248**	**49,661**	**51,069**	**103,717**	**180,505**	**53,469**	**54,896**	**74,317**	**113,116**	**745,480**	**841**	**772**	**747,093**

Debt.—In Table 7, direct debt represents total liabilities less sinking funds and indirect debt consists of guarantees of direct debt of other authorities by the Federal Government. Table 8 gives the gross bonded debt of the Federal Government and the average interest rates and terms of issue as at Mar. 31, 1957-59, together with place of payment.

7.—Direct and Indirect Debt (less Sinking Funds) of the Federal Government as at Mar. 31, 1957-59

Nature of Debt	1957	1958	1959
	$'000	$'000	$'000
Direct Debt			
Funded Debt—			
Bonded debt	12,743,415	12,720,107	13,979,113
Less sinking funds	*210,805*	*211,741*	*83,214*
Net funded debt	12,532,610	12,508,366	13,895,899
Short-term treasury bills[1]	1,625,000	1,525,000	1,595,000
Savings deposits and certificates	35,918	34,896	[2]
Accounts and other payables	898,143	749,445	830,398
Annuity, insurance and pension accounts	2,427,159	2,712,813	3,301,861
Other liabilities	254,006	264,616	339,638
Totals, Direct Debt (less Sinking Funds)	**17,772,836**	**17,795,136**	**19,962,796**
Indirect Debt			
Guaranteed bonds or debentures	792,543	1,028,407	987,907
Less sinking funds	—	—	—
Net guaranteed bonds or debentures	792,543	1,028,407	987,907
Guaranteed bank loans	101,250	165,732	139,646
Guaranteed insured loans under National Housing Act, 1954	1,083,000	1,394,635	2,054,319
Guarantees under Export Credits Insurance Act	66,112	68,371	54,668
Other guarantees	3,065	3,443	4,980
Totals, Indirect Debt (less Sinking Funds)[3]	**2,045,970**	**2,660,588**	**3,241,520**
Totals, Direct and Indirect Debt (less Sinking Funds)	**19,818,806**	**20,455,724**	**23,204,316**
	$	$	$
Direct debt (*less* sinking funds) per capita[4]	1,071	1,044	1,145
Indirect debt (*less* sinking funds) per capita[4]	123	156	186

[1] Having a term of three months. [2] Included in "Other liabilities". [3] Excludes deposits of chartered banks in Bank of Canada. [4] Based on estimated population as given at p. 165.

8.—Gross Bonded Debt of the Federal Government, Average Interest Rate and Term of Issue, and Place of Payment as at Mar. 31, 1957-59

Item		1957	1958	1959
Bonded debt	$'000	12,743,415	12,720,107	13,979,113
Average interest rate	p.c.	2.96	3.06	3.52
Average term of issue	yrs.	15.14	15.35	13.31
Place of Payment—				
Canada	$'000	12,391,604	12,368,296	13,777,302
New York	"	300,000	300,000	150,000
London (England)	"	51,811	51,811	51,811

Subsection 2.—Public Accounts Statistics of Federal Public Finance

Revenue and Expenditure.—Tables **9** and **10** show details of revenue and expenditure of the Federal Government for the fiscal years ended Mar. 31, 1958-60, as presented in the *Public Accounts*.

9.—Revenue of the Federal Government, Years Ended Mar. 31, 1958-60

Source: *Public Accounts*

Revenue	1958	1959	1960
	$	$	$
Tax Revenue—			
Customs import duties	498,068,539	486,508,581	525,722,158
Excise duties	300,132,512	316,744,269	335,207,406
Income tax	2,798,929,195	2,435,262,769	2,782,876,766
Personal[1]	*1,499,788,390*	*1,353,499,314*	*1,566,643,704*
Corporation[1]	*1,234,806,725*	*1,020,550,164*	*1,142,879,702*
On interest, dividends, rents, and royalties going abroad	*64,334,080*	*61,213,291*	*73,353,360*
Sales tax (net)[1]	703,169,768	694,490,787	732,658,330
Succession duties	71,607,758	72,535,140	88,430,705
Other taxes	250,919,610	241,836,980	287,444,573
Totals, Tax Revenue	4,622,827,382	4,247,378,526	4,752,339,938
Non-tax Revenue—			
Post Office	152,860,476	157,540,804	167,562,354
Return on investments[2]	169,423,960	221,203,583	239,653,687
Bullion and coinage	5,011,280	4,454,630	5,429,778
Other	98,665,181	124,145,146	124,765,452
Totals, Non-tax Revenue	425,960,897	507,344,163	537,411,271
Grand Totals, Revenue	**5,048,788,279**	**4,754,722,689**	**5,289,751,209**

[1] Excludes tax credited to the Old Age Security Fund.

[2] Includes interest on investments and profits of the Bank of Canada.

10.—Expenditure of the Federal Government, Years Ended Mar. 31, 1958-60

Source: *Public Accounts*

Expenditure	1958	1959	1960
	$	$	$
Agriculture	94,661,200	165,841,962	181,389,595
Acreage payments to western grain producers	—	*41,300,000*	—
Freight assistance on western feed grains	*17,499,693*	*19,999,094*	*23,796,342*
Other	*77,161,507*	*104,542,868*	*157,593,253*
Atomic Energy Control Board	21,580,708	26,136,051	30,114,125
Auditor General's Office	800,057	826,681	866,879
Board of Broadcast Governors	—	46,833	218,652
Canadian Broadcasting Corporation	42,974,021	62,017,601	63,945,994
Chief Electoral Officer	13,626,116	3,221,123	259,599
Citizenship and Immigration	51,804,821	52,843,669	54,916,725
Civil Service Commission	3,181,900	3,511,558	3,654,664
Defence Production	14,994,305	13,843,622	17,600,214
Capital assistance to defence industry	*4,758,526*	*1,733,716*	*2,631,306*
Other	*10,235,779*	*12,109,906*	*14,968,908*
External Affairs	60,209,169	75,486,493	96,895,469
Finance	1,187,361,634	1,228,205,281	1,420,155,128
Public Debt Charges—			
Interest on public debt	*539,207,260*	*606,615,887*	*735,630,175*
Annual amortization of bond discounts and commissions	*26,445,434*	*36,698,256*	*45,412,232*
Servicing of public debt	*549,945*	*606,933*	*542,161*
Cost of loan flotation	*1,220,637*	*4,105,410*	*1,877,622*
Miscellaneous	*28,944*	—	—
Totals, Public Debt Charges	*567,452,220*	*648,026,486*	*783,462,190*

10.—Expenditure of the Federal Government, Years Ended Mar. 31, 1958-60—concluded

Expenditure	1958	1959	1960
	$	$	$
Finance—concluded			
Provincial subsidies and tax-sharing payments	*382,636,661*	*467,006,053*	*518,900,813*
Government contribution to Civil Service Superannuation Account	*78,083,186*	*37,646,322*	*40,001,080*
Reserve for possible losses on realization of active assets	—	—	—
Grant to the Canada Council	*100,000,000*	—	—
Other	*59,189,567*	*75,526,420*	*77,791,045*
Fisheries	16,395,093	17,506,475	19,880,914
Governor General and Lieutenant-Governors	418,315	412,469	421,083
Insurance	1,178,311	1,224,160	1,237,533
Justice, including Penitentiaries	19,929,268	24,345,475	27,845,868
Labour	81,694,582	86,755,801	102,885,123
Unemployment Insurance Act, administration and Government contribution	*70,300,092*	*72,395,424*	*81,602,653*
Other	*11,394,490*	*14,360,377*	*21,282,470*
Legislation	6,845,985	7,626,868	7,669,237
Mines and Technical Surveys	36,134,969	43,788,537	54,432,381
National Defence	1,668,462,765	1,424,740,759	1,514,904,332
Mutual Aid to NATO countries	*118,464,310*	*70,711,509*	*40,757,328*
Other	*1,549,998,455*	*1,354,029,250*	*1,474,147,004*
National Film Board	4,019,466	4,258,905	4,555,417
National Gallery	616,908	646,433	739,148
National Health and Welfare	662,730,216	872,917,141	818,370,912
General health grants to provinces	*34,606,069*	*45,859,381*	*45,997,410*
Family allowances	*437,886,560*	*474,787,068*	*491,214,359*
Old age assistance, blind persons' and disabled persons' allowances[1]	*39,737,463*	*49,772,315*	*50,596,994*
Deficit Old Age Security Fund	*103,907,896*	*183,979,162*	—
Contributions under the Hospital Insurance and Diagnostic Services Act	—	*54,708,474*	*150,593,446*
Other[2]	*46,592,228*	*63,810,741*	*79,968,703*
National Research Council	21,610,139	25,405,644	31,501,387
National Revenue	67,708,839	68,787,837	68,696,069
Northern Affairs and National Resources	49,071,273	65,176,832	81,111,576
Post Office	153,319,783	157,803,478	165,792,340
Privy Council, including Prime Minister's Office	3,913,998	5,950,696	1,417,903[3]
Public Archives	652,850	720,044	745,329
Public Printing and Stationery	3,275,332	3,451,428	3,466,734
Public Works	205,992,445	221,182,153	217,876,413
Trans-Canada Highway contributions	*62,604,941*	*61,034,779*	*65,262,202*
Other	*143,387,504*	*160,147,374*	*152,614,211*
Royal Canadian Mounted Police	47,355,538	51,734,621	52,444,264
Secretary of State	3,975,562	4,364,883	4,655,356
Trade and Commerce	56,938,946	65,636,032	67,442,840
Transport	206,734,088	288,837,764	296,446,971
Veterans Affairs	277,242,409	288,784,224	288,304,879
Grand Totals, Expenditure	**5,087,411,011**	**5,364,039,533**	**5,702,861,053**

[1] Pensions under the Old Age Security Act, 1951 (effective January 1952) are paid out of the Old Age Security Fund account and are not recorded under departmental expenditure. [2] Includes civil defence. [3] Excludes National Capital Commission now included in "Public Works".

Statements of Assets and Liabilities.—Table 11 shows the statements of assets and liabilities of the Federal Government as they appear in the *Public Accounts* for the years ended Mar. 31, 1958-60.

11.—Statement of Assets and Liabilities of the Government of Canada, as at Mar. 31, 1958-60

Source: *Public Accounts*

Item	1958	1959	1960
	$	$	$
Assets			
Current Assets—			
Cash	468,013,176	640,459,071	565,436,461
Departmental Working Capital Advances and Revolving Funds	130,109,380	151,982,104 r	196,010,004
Other Current Assets—			
Moneys received after Mar. 31 but applicable to the current year	18,862,561	20,471,784	22,837,203
Securities investment account	79,846,332	98,030,754	77,862,926
	696,831,449	910,943,713 r	862,146,594
Advances to the Exchange Fund Account	1,975,000,000	1,995,000,000	1,960,000,000
Sinking fund and other investments held for retirement of unmatured debt	211,741,222	83,214,185	85,272,230
Loans to and Investments in Crown Corporations—			
Canadian National Railways	1,266,085,046	1,468,178,945	1,207,808,404
Central Mortgage and Housing Corporation	668,017,346	1,003,576,336	1,318,683,413
National Harbours Board	125,430,926	145,631,907	161,397,831
Miscellaneous	494,733,231	653,673,770	758,771,898
	2,554,266,549	3,271,060,958	3,446,661,546
Loans to national governments	1,487,984,714	1,448,960,511	1,414,527,922
Other Loans and Investments—			
Canada's Subscription to Capital of—			
International Monetary Fund	295,942,107	293,284,543	528,728,889
International Bank for Reconstruction and Development	70,864,349	70,864,349	70,864,349
Working capital advances to international organizations	2,231,679	2,245,148	2,059,265
Provincial governments	70,827,737	96,338,853	90,396,788
Soldier Settlement and Veterans' Land Act loans (*less* reserve for conditional benefits)	153,973,244	151,000,010	151,626,032
Miscellaneous	68,950,873	69,322,706	90,796,089
	662,789,989	683,055,609	934,471,412
Securities held in trust	22,646,036	20,742,062	30,611,723
Deferred Charges—			
Unamortized loan flotation costs	77,535,209	147,430,776	150,993,027
Unamortized portion of actuarial deficiency in the superannuation account and permanent services pension account	139,000,000	465,300,000	465,300,000
	216,535,209	612,730,776	616,293,027
Suspense accounts	2,465	2,465	33,300
Capital assets	1	1	1
Inactive loans and investments	90,854,389	92,215,718	93,539,317
Totals, Assets	**7,918,652,023**	**9,117,925,998 r**	**9,443,557,072**
Less reserve for losses on realization of assets	*546,384,065*	*546,384,065*	*546,384,065*
Net Assets	**7,372,267,958**	**8,571,541,933 r**	**8,897,173,007**
Net debt	11,046,273,890	11,678,389,860	12,089,194,003
	18,418,541,848	**20,249,931,793 r**	**20,986,367,010**

11.—Statement of Assets and Liabilities of the Government of Canada, as at Mar. 31, 1958-60—concluded

Item	1958	1959	1960
	$	$	$
Liabilities			
Current and Demand Liabilities—			
Outstanding treasury cheques	232,906,214	247,305,080	228,768,468
Accounts payable	201,369,937	256,401,698	245,099,099
Non-interest-bearing notes payable on demand	203,828,500	205,828,500	381,828,500
Matured debt outstanding	23,488,803	28,743,983	20,067,997
Interest due and outstanding	57,081,245	56,214,613	57,690,734
Interest accrued	129,053,772	124,892,689	137,622,473
Other current liabilities	27,144,833	33,173,039 r	27,979,624
	874,873,304	952,559,602 r	1,099,056,895
Deposit and trust accounts	187,018,117	237,917,457 r	242,673,334
Annuity, Insurance and Pension Accounts—			
Government annuities	1,047,641,226	1,105,825,076	1,156,867,225
Permanent services pension account	513,868,559	942,314,839	1,053,010,905
Superannuation account	1,045,760,439	1,136,021,863	1,229,620,322
Miscellaneous	105,542,600	117,699,254	125,877,197
	2,712,812,824	3,301,861,032	3,565,375,649
Undisbursed Balances of Appropriations to Special Accounts—			
National Defence equipment account (Sect. 3, Defence Appropriation Act, 1950)	211,739,028	—	—
Miscellaneous	73,628,240	83,386,633	96,619,964
	285,367,268	83,386,633	96,619,964
Suspense accounts and deferred credits	113,363,182	100,093,566	92,489,365
Unmatured Debt—			
Bonds—			
Payable in Canada	12,368,295,700	13,777,302,050	13,563,340,350
Payable in London	51,811,453	51,811,453	51,811,453
Payable in New York	300,000,000	150,000,000	150,000,000
Treasury Bills and Notes—			
Payable in Canada	1,525,000,000	1,595,000,000	2,125,000,000
	14,245,107,153	15,574,113,503	15,890,151,803
Totals, Liabilities	**18,418,541,848**	**20,249,931,793** r	**20,986,367,010**

Guaranteed Debt.—In addition to the direct debt already dealt with, the Government of Canada has assumed certain contingent liabilities. The major categories of this indirect or contingent debt are the guarantee of insured loans under the National Housing Act, the guaranteed bonds and debentures of the Canadian National Railways and the guarantee of deposits maintained by the chartered banks in the Bank of Canada. The remainder consists chiefly of guarantees of loans made by chartered banks to the Canadian Wheat Board and to farmers and veterans for certain authorized purposes and guarantees under the Export Credits Insurance Act.

12.—Guaranteed Debt of the Government of Canada, as at Mar. 31, 1960

Item	Amount of Guarantee Authorized	Amount Outstanding in the Hands of the Public as at Mar. 31, 1960[1]
	$	$
Railway Securities Guaranteed as to Principal and Interest—		
Canadian Northern Alberta Ry. Co. 3½ per cent deb. stock due 1960, £647,260/5/6	3,150,000	316,856
Canadian Northern Ontario Ry. Co. 3½ per cent deb. stock due 1961, £7,350,000/0/0	35,770,000	2,069,805
Grand Trunk Pacific Ry. Co. 3 per cent bonds due 1962, £14,000,000/0/0	68,040,000	26,465,130
Canadian Northern Alberta Ry. Co. 3½ per cent deb. stock due 1962, £733,561/12/10	3,570,000	—
Grand Trunk Pacific Ry. Co. 4 per cent bonds due 1962, £3,280,000/0/0	15,940,800	7,999,074
Canadian National Ry. Co. 2¾ per cent bonds due 1963	250,000,000	250,000,000
Canadian National Ry. Co. 5½ per cent bonds due 1964	200,000,000	199,000,000
Canadian National Ry. Co. 3 per cent bonds due 1966	35,000,000	35,000,000
Canadian National Ry. Co. 2¾ per cent bonds due 1967	50,000,000	50,000,000
Canadian National Ry. Co. 5 per cent bonds due 1968	60,000,000	56,400,000
Canadian National Ry. Co. 2⅞ per cent bonds due 1969	70,000,000	70,000,000
Canadian National Ry. Co. 2⅞ per cent bonds due 1971	40,000,000	40,000,000
Canadian National Ry. Co. 3¾ per cent bonds due 1974	200,000,000	200,000,000
Canadian National Ry. Co. 2¾ per cent bonds due 1975	6,000,000	6,000,000
Canadian National Ry. Co. 5 per cent bonds due 1977	90,000,000	87,300,000
Canadian National Ry. Co. 4 per cent bonds due 1981	300,000,000	300,000,000
Canadian National Ry. Co. 5¾ per cent bonds due 1985	100,000,000	99,500,000
	1,527,470,800	1,430,050,865
Railway Securities Guaranteed as to Interest Only—		
Grand Trunk Ry. Acquisition Guarantees—		
Grand Trunk 5 per cent perp. deb. stock £4,270,375/0/0	20,782,492	51,190
Grand Trunk 4 per cent perp. deb. stock £24,624,455/0/0	119,839,014	5,054
	140,621,506	56,244
Other Guarantees—		
Deposits maintained by chartered banks in Bank of Canada	Unstated	619,904,578
Loans made by approved lending institutions under National Housing Acts prior to 1954 Act	Unstated	Indeterminate
Loans made by lenders under Part IV of the National Housing Act, 1954, for home extensions and improvements	10,000,000	6,415,541[2]
Insured loans made by approved lenders under the National Housing Act, 1954	4,000,000,000	2,671,918,347[3]
Guarantees to owners of return from moderate-rental housing projects	Unstated	Indeterminate
Guarantees under Export Credits Insurance Act, Part I	100,000,000	96,180,842
Guarantees under Export Credits Insurance Act, Part II	12,750,000	1,275,000
Loans made by chartered banks under the Farm Improvement Loans Act	58,952,089	38,296,329
Loans made by chartered banks under the Veterans Business and Professional Loans Act	Indeterminate	308,704
Loans made by chartered banks under the Prairie Grain Producers' Interim Financing Act, 1956	Indeterminate	92,374
Loans made by chartered banks under the Fisheries Improvement Loans Act	Indeterminate	124,767
Loans made by chartered banks to Canadian Wheat Board	150,000,000	109,396,172
Loans made by chartered banks under the Prairie Grain Advance Payments Act	Unstated	20,152,662
Loans made by chartered banks under the Prairie Grain Provisional Payments Act	Unstated	824,747
Loans made by chartered banks under the Prairie Grain Loan Act	50,000,000	6,661

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[1] These contingent liabilities are expressed in Canadian dollars; where applicable, stocks and bonds payable solely in sterling or United States dollars are converted on the basis of £1=$2.80 and $1 U.S.=$1 Canadian, respectively. In addition the government has an indeterminate contingent liability in respect of rental guarantee contracts which in 1959 amounted to approximately $15,000,000. Against this amount was a reserve of $2,943,321.

[2] As at Dec. 31, 1959.

[3] As reported (in accordance with Sect. 45, National Housing Loan Regulations) by approved lenders for their respective fiscal years ended between Oct. 31 and Dec. 31, 1959.

A brief commentary dealing with the national debt of the Government of Canada from 1914 appears at p. 1091 of the 1954 Year Book. The following table summarizes the debt position during the period 1951-60 as to interest and amount outstanding. Details of unmatured debt and treasury bills outstanding and information on new security issues of the Federal Government may be found in the *Public Accounts*. They are summarized by standard classification in DBS publication *Financial Statistics of the Government of Canada* (Catalogue No. 68-211).

13.—Summary of the Public Debt and Interest Payments Thereon, Years Ended Mar. 31, 1951-60

NOTE.—Statistics for 1867-1913 are given in the 1942 Year Book, p. 775; those for 1914-35 in the 1947 edition, p. 972; those for 1936-48 in the 1951 edition, p. 1009; those for 1949 and 1950 in the 1959 edition, p. 1063.

Year	Gross Debt	Net Active Assets	Net Debt	Net Debt per Capita[1]	Increase or Decrease of Net Debt during Year	Interest Paid on Debt	Interest Paid per Capita[2]
	$	$	$	$	$	$	$
1951.......	16,923,307,028	5,489,992,080	11,433,314,948	816.14	−211,294,251	425,217,500	31.01
1952.......	17,257,668,676	6,072,387,129	11,185,281,547	773.59	−248,033,402	432,423,082[3]	30.87
1953.......	17,918,490,812	6,756,756,543	11,161,734,269	751.88	−23,547,277	451,339,521	31.21
1954.......	17,923,189,502	6,807,252,438	11,115,937,064	727.15	−45,797,205	476,061,625	32.07
1955.......	17,951,491,464	6,688,411,310	11,263,080,154	717.49	147,143,090	477,914,894	31.26
1956.......	19,124,232,779	7,843,863,815	11,280,368,964	701.47	17,288,810	492,624,067	31.38
1957.......	18,335,797,515	7,328,146,357	11,007,651,158	663.55	−272,717,806	520,189,398	32.35
1958.......	18,418,541,848	7,372,267,958	11,046,273,890	647.94	38,622,732	539,207,260	32.50
1959.......	20,246,773,669	8,568,383,809	11,678,389,860	669.56	632,115,970	605,615,887	35.58
1960.......	20,986,367,010	8,897,173,007	12,089,194,003	678.63	410,804,143	735,630,175	42.17

[1] Based on the official estimates of population for June 1 of the year indicated (see p. 165).

[2] Based on the official estimates of population for June 1 of the year immediately preceding the one indicated (see p. 165).

[3] Excludes $87,510,058 adjustment required to place interest on public debt on accrued basis.

Subsection 3.—Revenue from Taxation

The incidence of Federal Government taxation is dealt with in the special article on Taxation in Canada at pp. 1038-1050. This Subsection includes statistical data on revenue received from individual income tax, corporation tax, succession duties, excise duties and excise taxes; customs receipts constitute a single item in the *Public Accounts* and are not included here.

Individual and Corporation Income Tax

Statistics of income tax collections are gathered at the time the payments are made and are therefore up to date. Over 85 p.c. of individual taxpayers are wage or salary earners who have almost the whole of their tax liability deducted at the source by their employers. All other taxpayers are required to pay most of their estimated tax during the taxation year. Thus, the greater part of the tax is collected during the same year in which the related income is earned and only a limited residue remains to be collected when the returns are filed. The collections for a given fiscal year include tax deductions and instalments for twelve months, embracing portions of two taxation years, and a mixture of year-end payments for the first of these years and for the preceding year; they cannot therefore be closely related to the statistics for a given taxation year. As little information about a taxpayer is received when the payment is made and, as a single cheque from one employer may frequently cover the tax payments of hundreds of employees, the payments cannot be statistically related to taxpayers by occupation or income. Descriptive classifications of taxpayers are available only from tax returns but collection statistics, if interpreted with the current tax structure and the above factors in mind, indicate the trend of income in advance of the final compilation of statistics.

The statistics given in Table 14 pertain to tax collections by the Taxation Division of the Department of National Revenue. The collections are for fiscal years ended Mar. 31.

14.—Taxes Collected by the Taxation Division of the Department of National Revenue, Years Ended Mar. 31, 1952-61

NOTE.—Figures for 1917-34 are given in the 1947 Year Book, pp. 999-1000; for 1935-48 in the 1951 Year Book, p. 994; and for 1949-51 in the 1959 edition, p. 1066.

Year Ended Mar. 31—	Income Tax[1]			Excess Profits Tax	Succession Duties and Estate Taxes	Total Collections
	Individual[2]	Corporation	Total			
	$	$	$	$	$	$
1952	1,030,793,334	1,132,680,074	2,163,473,408	2,364,909	38,207,985	2,204,046,302
1953	1,278,949,939	1,276,940,150	2,555,890,089	—	38,070,529	2,593,960,618
1954	1,332,116,907	1,246,786,598	2,578,903,505	—	39,137,594	2,618,041,099
1955	1,345,611,443	1,066,585,823	2,412,197,266	—	44,768,029	2,456,965,295
1956	1,354,275,414	1,081,055,818	2,435,331,232	—	66,607,026	2,501,938,258
1957	1,601,897,580	1,335,636,914	2,937,534,494	—	79,709,197	3,017,243,691
1958	1,699,123,470	1,295,470,725	2,994,594,195	—	71,607,758	3,066,201,953
1959	1,561,062,606	1,075,878,164	2,636,940,770	—	72,535,140	2,709,475,910
1960	1,825,547,063	1,234,215,702	3,059,762,765	—	88,430,705	3,148,193,470
1961	2,028,733,394	1,380,128,380	3,408,861,774	—	84,879,372	3,493,741,146

[1] Includes old age security tax from 1952-60. [2] Includes "non-resident" taxes.

Individual Income Tax Statistics.—Individual income tax statistics are presented in Tables **15** to **17** on a calendar-year basis and are compiled from a sample of all returns received. Taxpayers and amounts of income and tax are shown for selected cities and by occupation and income classes.

15.—Number of Taxpayers and Amounts of Income and Tax, by Selected Cities, 1958 and 1959

City and Province	1958			1959		
	Taxpayers	Total Income Assessed	Tax Payable[1]	Taxpayers	Total Income Assessed	Tax Payable[1]
	No.	$'000	$'000	No.	$'000	$'000
Brantford, Ont.	18,423	71,362	6,055	19,917	81,048	7,772
Calgary, Alta.	79,083	338,960	33,848	82,236	372,078	39,477
Edmonton, Alta.	96,215	387,868	35,531	95,499	403,280	40,365
Fort William and Port Arthur, Ont.	29,190	117,678	9,836	31,193	126,557	11,300
Halifax, N.S.	41,301	154,383	12,429	43,898	171,832	15,128
Hamilton, Ont.	111,393	469,039	42,622	110,029	484,667	48,735
Hull, Que.	14,143	50,076	2,928	13,758	50,827	3,424
Kitchener and Waterloo, Ont.	31,599	125,019	11,149	33,470	134,792	12,865
London, Ont.	48,129	186,475	16,571	53,874	218,865	21,586
Montreal, Que.	540,667	2,249,965	189,390	565,235	2,413,625	209,209
New Westminster, B.C.	20,977	84,574	7,028	20,738	85,763	7,819
Niagara Falls, Ont.	15,107	62,446	5,058	14,526	60,390	5,342
Oshawa, Ont.	20,638	88,151	8,470	22,092	96,096	10,272
Ottawa, Ont.	96,773	410,031	38,903	99,877	433,928	43,813
Quebec, Que.	58,543	226,586	15,810	59,084	238,027	18,042
Regina, Sask.	37,231	148,163	13,352	38,023	156,126	15,137
St. Catharines, Ont.	21,528	92,108	8,333	23,591	102,640	9,943
St. John's, Nfld.	17,407	66,667	5,544	17,766	72,813	6,852
Saint John, N.B.	19,796	70,335	5,022	21,422	79,335	6,125
Saskatoon, Sask.	26,123	103,539	8,951	28,926	117,543	10,682
Sherbrooke, Que.	11,665	41,893	2,701	13,369	48,718	3,190
Sudbury and Copper Cliff, Ont.	30,259	121,811	9,840	33,716	152,295	14,148
Sydney and Glace Bay, N.S.	13,170	51,038	3,548	13,358	53,293	3,799
Toronto, Ont.	620,301	2,640,721	277,460	603,529	2,606,281	289,128
Vancouver (incl. West Van.), B.C.	211,622	914,530	90,371	218,917	972,659	102,510
Victoria, B.C.	42,370	172,051	14,326	41,714	173,759	16,108
Windsor, Ont.	45,949	188,788	16,002	48,046	206,888	18,935
Winnipeg, Man.	144,144	564,027	50,182	151,974	616,713	59,516
Other localities	1,584,506	6,027,080	442,066	1,722,713	6,717,451	528,819
Totals	**4,048,252**	**16,225,364**	**1,383,326**	**4,242,490**	**17,448,289**	**1,580,041**

[1] Includes old age security tax.

16.—Number of Taxpayers and Amounts of Income and Tax, by Occupational Class, 1958 and 1959

Occupational Class	1958			1959		
	Taxpayers	Total Income Assessed	Tax Payable[1]	Taxpayers	Total Income Assessed	Tax Payable[1]
	No.	$'000	$'000	No.	$'000	$'000
Farmers	61,858	247,776	17,967	66,011	273,615	20,885
Fishermen	5,315	26,478	2,727	3,895	17,113	1,468
Professionals—						
Accountants	3,826	40,657	7,280	3,620	39,939	7,534
Medical doctors	12,201	186,242	38,310	12,878	202,663	44,035
Dentists	4,479	47,754	7,859	4,220	48,973	8,758
Lawyers and notaries	7,133	93,894	20,347	6,934	97,930	22,435
Engineers and architects	2,109	30,075	6,816	2,183	32,705	7,537
Nurses	2,611	6,115	361	3,122	7,391	448
Other professionals	8,157	50,961	6,436	9,307	59,793	7,883
Employees	3,571,015	13,465,575	1,033,414	3,743,111	14,551,294	1,201,606
Salesmen	50,968	273,483	26,931	52,029	289,806	30,847
Business proprietors	188,636	1,030,342	117,047	192,724	1,042,157	119,867
Investors	96,318	604,974	89,468	107,089	657,459	97,101
Pensioners	24,213	74,995	3,944	24,326	75,827	4,297
All others	9,413	46,043	4,419	11,041	51,625	5,340
Totals	**4,048,252**	**16,225,364**	**1,383,326**	**4,242,490**	**17,448,289**	**1,580,041**

[1] Includes old age security tax.

17.—Individual Income Tax Statistics, by Income Class, 1958 and 1959

Income	Taxpayers		Total Income Assessed		Tax Payable[1]		Average Tax[1]	
	1958	1959	1958	1959	1958	1959	1958	1959
	No.	No.	No.	$'000	No.	$'000	$	$
Under $1,000	20,606	22,515	11,297	11,671	746	1,091	36	48
$1,000 under $1,100	2,720	2,755	2,838	2,882	132	154	49	56
$1,100 " $1,200	59,317	63,265	68,172	72,689	561	547	9	9
$1,200 " $1,300	67,242	68,666	83,749	85,382	1,298	1,360	19	20
$1,300 " $1,400	70,347	69,416	94,579	93,326	2,164	2,219	31	32
$1,400 " $1,500	67,960	68,873	98,112	99,485	2,803	2,969	41	43
$1,500 " $1,600	70,663	69,918	109,171	108,026	3,753	3,872	53	55
$1,600 " $1,700	71,244	73,298	117,245	120,603	4,269	4,714	60	64
$1,700 " $1,800	71,641	72,849	125,008	127,120	5,049	5,357	70	73
$1,800 " $1,900	74,744	76,416	137,845	140,915	6,161	6,530	82	85
$1,900 " $2,000	73,773	74,269	143,438	144,418	6,872	7,226	93	93
Totals, $1,000 and under $2,000	629,651	639,725	980,157	994,846	33,062	34,948	53	54
$2,000 under $2,100	74,038	73,327	151,404	149,992	7,789	7,889	105	107
$2,100 " $2,200	84,238	83,765	180,687	179,669	8,980	9,249	107	110
$2,200 " $2,300	82,105	85,396	184,341	191,741	9,338	10,304	114	120
$2,300 " $2,400	87,627	85,736	205,533	201,095	10,618	11,053	121	129
$2,400 " $2,500	89,875	90,204	219,649	220,425	11,652	12,463	130	138
$2,500 " $2,600	86,587	87,332	220,331	222,246	11,927	12,888	138	148
$2,600 " $2,700	96,176	93,820	254,300	248,087	13,003	13,835	135	147
$2,700 " $2,800	94,464	93,268	259,294	256,012	13,876	14,474	147	173
$2,800 " $2,900	96,938	96,164	275,861	273,642	14,744	15,454	152	161
$2,900 " $3,000	101,820	97,573	299,814	287,280	16,008	16,070	157	165
Totals, $2,000 and under $3,000	893,868	886,585	2,251,214	2,230,189	117,935	123,679	132	139

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[1] Includes old age security tax.

17.—Individual Income Tax Statistics, by Income Class, 1958 and 1959—concluded

Income	Taxpayers		Total Income Assessed		Tax Payable[1]		Average Tax[1]	
	1958	1959	1958	1959	1958	1959	1958	1959
	No.	No.	No.	$'000	No.	$'000	$	$
$3,000 under $3,100..	102,358	100,555	311,466	306,004	16,831	17,637	164	176
$3,100 " $3,200..	109,156	107,963	343,288	339,548	18,547	19,435	170	180
$3,200 " $3,300..	101,674	101,990	329,858	330,933	17,868	19,182	176	188
$3,300 " $3,400..	103,537	104,776	346,391	350,445	19,099	20,621	184	196
$3,400 " $3,500..	102,751	100,913	354,031	347,612	19,606	20,858	191	206
$3,500 " $4,000..	496,805	496,521	1,857,461	1,857,198	107,340	115,231	216	232
$4,000 " $4,500..	407,922	427,938	1,725,578	1,812,331	108,884	121,821	267	284
$4,500 " $5,000..	287,953	328,281	1,361,708	1,553,214	94,498	114,341	328	348
Totals, $3,000 and under $5,000.....	1,712,156	1,768,937	6,629,781	6,897,285	402,673	449,126	235	253
$5,000 under $6,000..	340,429	397,403	1,848,201	2,159,147	147,393	180,192	433	453
$6,000 " $7,000..	165,242	195,740	1,062,430	1,260,465	97,585	120,528	591	616
$7,000 " $8,000..	88,901	106,225	661,975	791,360	67,111	83,146	755	783
$8,000 " $9,000..	49,370	59,791	416,871	505,245	45,684	58,457	925	974
$9,000 " $10,000..	32,298	38,112	305,347	360,122	36,219	44,737	1,121	1,174
Totals, $5,000 and under $10,000....	676,240	797,271	4,294,824	5,076,339	393,992	487,060	583	611
$10,000 under $15,000	68,351	76,753	815,693	913,982	115,119	133,913	1,684	1,745
$15,000 " $20,000	22,931	24,389	391,916	416,981	72,993	80,432	3,183	3,708
$20,000 " $25,000	9,330	10,027	207,335	222,448	46,361	51,389	4,969	5,124
Totals, $10,000 and under $25,000....	100,612	111,169	1,414,944	1,553,411	234,473	265,734	2,330	2,393
$25,000 under $50,000	12,181	13,231	402,770	437,095	111,214	124,462	9,130	9,407
$50,000 and over.....	2,938	3,057	240,377	247,456	89,231	93,942	30,371	30,730
Totals, $25,000 and over........	15,119	16,288	643,147	684,551	200,445	218,404	13,258	13,409
Grand Totals....	**4,048,252**	**4,242,490**	**16,225,364**	**17,448,289**	**1,383,326**	**1,580,041**	**342**	**372**

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[1] Includes old age security tax.

Corporation Income Tax Statistics.—Corporation statistics presented in Tables 18 and 19 are on a taxation-year basis prior to assessment. The data were extracted and compiled from the returns shortly after they were filed and are as declared by the taxpayer without the scrutiny or revision of the Department of National Revenue. Provincial figures contain an unavoidable bias in favour of Ontario and Quebec because many large corporations operating across Canada file their returns in one or other of these provinces.

18.—Summary Statistics for Corporations Reporting a Profit, Taxation Years 1958 and 1959

Item	1958			1959		
	Corporations Reporting	Current Year Profit	Total Tax Declared[1]	Corporations Reporting	Current Year Profit	Total Tax Declared[1]
	No.	$'000,000	$'000,000	No.	$'000,000	$'000,000
Active taxable corporations—excluding co-operatives and Crown corporations	55,910	3,054.9	1,054.5	62,742	3,529.4	1,300.1
Inactive corporations	1,559	1.1	0.1	2,667	1.4	0.2
Co-operatives	1,689	8.0	1.9	1,996	9.3	2.2
Crown corporations	7	28.9	12.3	8	25.4	11.7
Totals, Taxable Corporations	59,165	3,092.9	1,068.7	67,413	3,565.5	1,314.2
Personal corporations	2,218	31.8	—	2,308	31.7	—
Other exempt corporations	3,308	19.4	—	3,447	34.6	—
Totals, Taxable and Exempt	**64,691**	**3,144.1**	**1,068.7**	**73,168**	**3,631.8**	**1,314.2**

[1] Includes old age security tax.

19.—Distribution of Active Taxable Corporations Reporting a Profit, by Industry and Province, Taxation Years 1958 and 1959

Industrial Group and Province	1958			1959		
	Corporations Reporting	Current Year Profit	Total Tax Declared[1]	Corporations Reporting	Current Year Profit	Total Tax Declared[1]
	No.	$'000,000	$'000,000	No.	$'000,000	$'000,000
Industrial Group						
Agriculture, fishing and forestry	992	12.3	2.8	1,065	12.9	3.0
Mining	487	100.4	38.3	652	151.2	62.4
Manufacturing	11,598	1,439.4	528.2	12,229	1,695.6	667.4
Construction	6,502	194.3	56.7	7,495	181.4	53.9
Transportation, storage and communications	2,362	212.5	80.8	2,693	284.5	116.7
Public utilities	223	64.9	25.1	272	77.2	31.6
Wholesale trade	8,938	259.4	81.2	9,480	295.8	95.9
Retail trade	9,784	249.0	81.4	11,253	282.7	93.6
Finance	9,751	437.5	136.8	11,625	448.2	147.1
Service	5,273	85.2	23.3	5,978	99.9	28.5
Totals	**55,910**	**3,054.9**	**1,054.5**	**62,742**	**3,529.4**	**1,300.1**
Province						
Newfoundland	540	21.2	8.2	640	26.0	10.7
Prince Edward Island	146	3.3	1.0	173	3.9	1.3
Nova Scotia	1,660	38.3	13.7	1,402	32.3	12.6
New Brunswick	1,123	31.5	11.9	1,217	36.3	14.1
Quebec	13,602	968.4	333.3	15,616	1,078.6	390.8
Ontario	20,292	1,465.0	491.3	23,153	1,725.3	628.1
Manitoba	2,854	117.1	45.7	2,997	124.8	49.7
Saskatchewan	1,656	32.4	11.1	1,994	35.6	11.7
Alberta	5,271	153.5	54.7	5,672	172.0	64.9
British Columbia	8,766	224.3	83.6	9,878	294.5	116.1

[1] Includes old age security tax.

20.—Corporations Reporting a Profit, by Income Class and Size of Total Assets, Taxation Years 1958 and 1959

NOTE.—Figures are for corporations described as "fully tabulated", which means corporations for which sufficient information has been received for complete analyses.

Income Class and Size of Assets	1958		1959	
	Corporations Reporting	Current Year Profit	Corporations Reporting	Current Year Profit
	No.	$'000,000	No.	$'000,000
Income Class				
Under $5,000	21,936	40.2	23,761	40.1
$5,000 under $10,000	9,520	66.2	10,899	74.2
$10,000 under $25,000	14,593	243.7	16,013	263.6
$25,000 under $50,000	4,030	134.9	5,847	186.5
$50,000 under $100,000	2,046	142.7	2,120	147.3
$100,000 under $250,000	1,586	246.1	1,677	260.8
$250,000 under $500,000	663	232.1	707	244.7
$500,000 under $1,000,000	356	249.4	396	277.3
$1,000,000 under $5,000,000	326	650.2	343	680.0
$5,000,000 or over	77	845.2	89	1,172.5
Totals	**55,133**	**2,850.6**	**61,852**	**3,347.0**
Total Assets				
Under $50,000 $50,000 under $100,000	25,240	134.3	27,324	156.8
$100,000 under $250,000	14,432	177.2	16,840	204.7
$250,000 under $500,000	7,377	161.8	8,349	181.9
$500,000 under $1,000,000	3,682	183.6	4,479	195.6
$1,000,000 under $5,000,000	3,272	482.6	3,654	533.2
$5,000,000 under $10,000,000	523	220.1	555	250.3
10,000,000 under $25,000,000	320	324.7	340	321.0
$25,000,000 under $100,000,000	220	535.4	238	611.6
$100,000,000 or over	67	631.0	73	892.0

Succession Duties and Estate Tax

A history of succession duties in Canada, together with examples of the occurrences of federal duty on typical estates and of combined federal and provincial duties on typical estates, is given in the 1956 Year Book, pp. 1064-1068.

Since 1947, only Ontario and Quebec among the provinces have been levying succession duties, the other provinces having leased this field to the Federal Government under terms of the 1947, 1952 and 1957 tax rental agreements (pp. 1067-1070); a tax abatement of 50 p.c. of the federal estate tax otherwise payable is granted in respect of property situated in a province which does not 'rent' its succession duties to the Federal Government.

An outline of the Estate Tax Act passed by Parliament in 1958 is given in the 1959 Year Book, pp. 1070-1071. The Act was amended in 1960 with respect to charitable donations, life insurance and annuities.

Table **21** shows the receipts of the various governments from succession duties for the years ended Mar. 31, 1957-60.

21.—Federal and Provincial Revenue from Succession Duties and Estate Tax, Years Ended Mar. 31, 1957-60

NOTE.—Statistics for 1948-52 are given in the 1954 Year Book, p. 1080; for 1953-54 in the 1956 edition, p. 1064; and for 1955-56 in the 1959 edition, p. 1071.

Province	1957	1958	1959	1960
	$'000	$'000	$'000	$'000
Federal	79,709	71,608	72,535	88,431[1]
Provincial—[2]				
Newfoundland	—	—	—	—
Prince Edward Island	—	—	—	—
Nova Scotia	2	12	1	—
New Brunswick	4	—	1	—
Quebec	35,372	20,637	22,270	22,500
Ontario	29,161	31,980	33,518	34,500
Manitoba	6	2	1	—
Saskatchewan	6	9	4	5
Alberta	4	5	2	5
British Columbia	—	—	—	—

[1] Estate tax, including succession duties. [2] Under terms of the 1947, 1952 and 1957 Dominion-Provincial Taxation Agreements all provinces except Ontario and Quebec refrain from levying succession duties; amounts shown for other provinces are arrears. Provincial figures for 1960 are preliminary.

Excise Taxes

Excise taxes collected by the Excise Division of the Department of National Revenue are given for the years ended Mar. 31, 1956-60 in Table **22**.

22.—Excise Taxes Collected, by Commodity, Years Ended Mar. 31, 1956-60

(Accrued Revenue)

Commodity	1956	1957	1958	1959	1960
	$	$	$	$	$
Domestic—					
Automobiles, tires and tubes	63,298,865	69,314,263	62,108,080	47,303,897	47,266,990
Beverages	8,607,286	8,848,161	608,851	...	...
Candy and chewing gum	8,390,591	9,021,685	712,700	...	...
Carbonic acid gas	147,937	139,378	6,463	...	...
Cigars, cigarettes and tobacco	125,107,756	130,581,694	140,682,617	146,509,545	183,868,989
Licences	82,062	84,520	81,984	19,324	518
Lighters	80,674	69,640	60,329	62,833	64,393
Matches	597,394	604,431	632,146	628,914	610,733
Other taxes on manufactures	4,522,546	5,387,461	4,668,672	4,526,775	4,869,629
Phonographs, radios and tubes	4,013,432	5,320,010	5,581,524	5,495,501	5,556,782
Playing cards	648,975	635,202	701,555	783,670	786,055
Sales, domestic	676,008,159	764,048,020	764,789,901	753,175,577	863,255,893
Television sets and tubes	17,627,314	12,443,101	9,927,745	10,033,057	9,139,633
Toilet preparations	5,335,626	5,828,044	6,032,146	6,576,040	7,408,815
Wines	2,485,760	2,618,324	2,744,237	3,140,180	3,026,623
Penalties and interest	315,014	399,648	476,786	427,332	571,638
Totals, Domestic	917,269,391	1,015,343,582	999,815,736	978,682,645	1,126,426,690
Imported	166,931,249	176,714,583	159,173,870	162,110,151	198,111,452
Grand Totals	**1,084,200,640**	**1,192,058,165**	**1,158,989,606**	**1,140,792,796**	**1,324,538,142**

Excise Duties

Gross excise duties collected during the years ended Mar. 31, 1956-60 are given in Table **23** and other data of interest arising as a by-product of administration, such as the quantities of grain and other products used in distillation and the quantities of goods taken out of bond and subject to excise tax, are given in Table **24**. The totals given in Table **23** do not agree with net excise duties as shown in Table **9** because refunds, drawbacks and, for spirits, a transfer tax are included. A drawback of 90 p.c. of the duty may be granted when domestic spirits, testing not less than 50 p.c. over proof, are delivered in limited quantities for medicinal or research purposes to universities, scientific or research laboratories, public hospitals, or health institutions in receipt of federal and provincial government aid.

23.—Gross Excise Duties Collected, Years Ended Mar. 31, 1956-60

Item	1956	1957	1958	1959	1960
	$	$	$	$	$
Spirits	77,518,388	86,180,032	89,928,576	96,550,734	102,353,962
Beer or malt liquor	80,742,806	83,077,741	88,225,546	83,058,147	90,704,392
Tobacco and cigarettes	110,092,584	120,818,541	131,378,168	140,881,924	145,503,942
Cigars	262,477	267,235	305,894	319,369	672,030
Licences	35,143	35,556	34,069	34,471	34,547
Totals	**268,651,398**	**290,379,105**	**309,872,253**	**320,844,645**	**339,268,873**

24.—Statistics of Licences and Distillation, Years Ended Mar. 31, 1956-60

Item		1956	1957	1958	1959	1960
Licences issued	No.	30	28	28	27	28
Licence fees	$	6,500	7,750	7,250	7,000	7,250
Grain, etc., Used for Distillation—						
Malt	lb.	40,523,848	41,788,225	39,096,917	38,307,971	44,931,157
Indian corn	"	256,237,853	281,299,649	247,011,281	240,221,429	280,449,929
Rye	"	50,297,683	55,480,416	61,228,045	61,923,728	75,823,828
Wheat and other grain	"	3,013,785	803,490	770,540	4,105,310	1,619,782
Totals, Grain Used	lb.	350,073,169	379,371,780	348,106,783	344,558,438	402,824,696
Molasses used	lb.	35,793,467	35,471,876	33,352,564	69,272,572	47,990,689
Wine and other materials	"	5,303,650	4,114,008	4,875,894	8,485,879	7,949,327
Sulphide liquor	gal.	409,830,302	368,070,334	374,711,047	339,002,204	341,939,637
Proof spirits manufactured	proof gal.	28,535,869	30,028,834	28,135,387	29,763,383	32,188,806

The quantity of spirits manufactured has fluctuated greatly since 1920, varying from a low of 2,356,329 proof gal. in that year to a high of 35,555,059 proof gal. recorded in 1945. The total for 1960 was 32,188,806 proof gal.

The amounts of beverage spirits, malt beer, malt, cigars, ciragettes and other tobacco taken out of bond for consumption are given in the Domestic Trade Chapter, Table **38**, p. 913.

Subsection 4.—Subsidies and Taxation Agreements with the Provinces

Subsidies.—A brief history of certain annual payments made by the Federal Government to the provinces under the provisions of the British North America Act and subsequent arrangements entered into from time to time appears in the 1956 Year Book, pp. 1068-1069. All payments made by the Federal Government to the provinces during the year ended Mar. 31, 1959 are shown in detail in Table **6**, on p. 1053.

Taxation Agreements.—Early in World War II, the provincial governments vacated the personal income tax, corporation income tax and succession duty fields in favour of the Federal Government for the duration of the War and a limited period thereafter, in return for a tax rental payment from the Federal Government. Additional tax rental agreements were entered into between the Federal Government and the provinces in 1947, 1952 and 1957. The Province of Quebec did not rent its tax fields under any of these postwar agreements. Ontario did not rent any tax fields under the 1947 agreements; it did not rent succession duties under the 1952 agreements and did not rent either succession duties or corporation income tax under the 1957 agreements. Apart from these exceptions, all of the provinces have participated in the various tax agreements as fully as possible. Newfoundland rented its tax fields as soon as it entered Confederation.

The Wartime Tax Agreements of 1942 are outlined in the 1946 Year Book, pp. 900-901. The 1947 and 1952 Tax Rental Agreements are outlined on pp. 1087-1090 of the 1954 edition. The 1957 fiscal arrangements are authorized by the Federal-Provincial Tax-Sharing Arrangements Act. This Act was passed in July of 1956 and subsequently amended in 1958, 1959 and 1960 as noted below. It covers the five-year period from Apr. 1, 1957 to Mar. 31, 1962.

The current fiscal arrangements differ substantially in principle from those in effect before Apr. 1, 1957. Provision is still made for tax rental agreements in the fields of individual and corporation income tax and succession duties, but the tax rental payment to a province is now the estimated yield at certain agreed or 'standard' rates of the taxes rented by that province to the Federal Government. The fiscal aid components of the payments which were formerly contained in the total tax rental payment under the 1952-57 agreements are now dealt with separately by means of "tax equalization payments". These tax equalization payments are so calculated that, when added to the tax rental payments, they raise the total per capita return in each province to the average per capita return of standard taxes in the two provinces that have the highest per capita yield of standard taxes.

The standard taxes are: (*a*) individual income tax at 10 p.c. of the federal tax (raised in 1958-59 to 13 p.c.); (*b*) corporation income tax at 9 p.c. of corporation taxable income, and (*c*) succession duties at 50 p.c. of the federal duties averaged over a three-year period.

In addition, provincial revenue stabilization payments are provided which will support the payments to a province at a level determined by the greatest of: (*a*) the adjusted 1957 tax rental payment, which is the amount payable in 1956-57 to any province whether under an agreement or not, adjusted for any population changes in the year in question; (*b*) the projected tax rental payment, which is the amount that would be payable to any province in a year if the 1952 Tax Rental Agreements were to be extended into the year in question; and (*c*) the basic stabilization amount, which for 1958-59 was 95 p.c. of the amount of tax equalization payments, provincial revenue stabilization payments and current tax rental payments applicable to the province in 1957-58; and, for subsequent years, 95 p.c. of the average of such payments in the two previous years.

The tax equalization payments and the provincial revenue stabilization payments are payable to a province regardless of any action they may take in these tax fields. Tax rental payments, however, are subject to agreement. Where a province does not rent but levies its own tax, the federal tax is abated at the standard rate.

Following a Federal-Provincial Conference in November 1957, the Federal Government increased the standard rate of personal income tax from 10 p.c. to 13 p.c. This was done on an interim basis for the fiscal year 1958-59 by amendment to the Federal-Provincial Tax-Sharing Arrangements Act. The Act was amended again in 1959 extending the higher rate for another year and also in 1960 extending it for a further two years, i.e., to Mar. 31, 1962 when the 1957 agreements expire.

The 1958 amendments to the Federal-Provincial Tax-Sharing Arrangements Act also provided for the institution of special grants, known as Atlantic Provinces Adjustment Grants, to be paid to the four Atlantic Provinces for four years commencing Apr. 1, 1958 and totalling $25,000,000 annually divided as follows: Nova Scotia, New Brunswick and Newfoundland each $7,500,000, and Prince Edward Island $2,500,000.

The 1960 amendments to the Federal-Provincial Tax-Sharing Arrangements Act also provided alternative arrangements for payment of federal grants to institutions of higher learning. These grants are paid under the authority of the Act through the Canadian Universities Foundation or, under certain circumstances, directly by the province. Where a province that does not rent its corporation taxes to the Federal Government chooses to pay the university grants directly, its corporate taxpayers will receive an abatement from the federal income tax of 10 p.c. instead of 9 p.c. Where the loss of revenue to the federal treasury by reason of the 1-p.c. increase in abatement exceeds the cost of university grants of $1.50 per capita in the province concerned, a deduction equivalent to this excess will be made by the Federal Government from other payments made to the province under the Federal-Provincial Tax-Sharing Arrangements Act. On the other hand, if the cost of such increased abatement of 1 p.c. in the corporation tax rate should be less than university grants of $1.50 per capita, the Federal Government will pay the difference to the provincial government for the benefit of the universities.

Three Federal-Provincial Conferences—in July 1960, October 1960 and February 1961—have been held to discuss financial arrangements for the five-year period commencing Apr. 1, 1962. The federal proposals for this period were stated at the February conference, the main points being as follows:—

(1) The Federal Government would discontinue the tax rental system and the provinces would be free to impose whatever rates of tax in the jointly occupied fields they consider to be necessary to meet their respective financial responsibilities.

(2) The Federal Government would be willing to collect the personal income tax and the corporation income tax for any province using the same tax base as the Federal Government. A joint tax return would then be used by the taxpayer for both the federal and provincial taxes. This tax collection service would be provided free of charge and pursuant to a tax collection agreement. The Federal Government would also, in the case of any province choosing not to impose a succession duty, pay to such province half of the yield from the federal estate tax in that province calculated in the same way as under the current tax rental agreements.

(3) The Federal Government would reduce the federal personal income tax progressively by 16 p.c. during the first year of the new arrangement, 17 p.c. for the second year, 18 p.c. for the third, 19 p.c. for the fourth and 20 p.c. for the fifth. The Federal Government would reduce the federal corporation income tax by 9 p.c. of taxable income which is the same as the standard rate of corporation income tax under the 1957 tax agreements and which represents a diminution in the current federal tax of about 22 p.c. With respect to both the corporation and personal income taxes, the federal rates would be reduced from the levels which would otherwise prevail at the times specified. In the case of any province levying a succession duty the Federal Government would be prepared to abate its tax by 50 p.c. The rates noted above for personal income tax, corporation tax and succession duty would constitute standard rates of tax for purposes of calculating equalization and stabilization payments.

(4) Equalization payments for a fiscal year would be based on the amount, if any, required to bring each province up to the national average per capita yield of the three standard taxes at the progressively rising standard rates noted above, plus one-half of the three-year moving average of gross natural resource revenues as determined by the Dominion Bureau of Statistics for the three fiscal years immediately preceding. In addition, the proposed equalization formula contains two guarantees: (*a*) no province entitled to equalization under the national average formula would be worse off than it would be under a continuation of the present rates of standard tax (13–9–50) with equalization to the per capita average yield of the top two provinces and with the Atlantic Provinces Adjustment Grants; (*b*) no province would receive less in total than it received from standard taxes, equalization, stabilization and Atlantic Provinces Adjustment Grants for the fiscal year 1961-62 or the average of the fiscal years 1960-61 and 1961-62 whichever was greater.

(5) Stabilization payments would be continued assuring provinces that the amount of the yield of the standard taxes plus equalization would not be permitted in any year to fall below 95 p.c. of the average of the totals of the standard taxes, equalization and stabilization for the preceding two years.

(6) The Atlantic Provinces Adjustment Grants would be continued for a further five years and increased from $25,000,000 to $35,000,000 per annum with the basis of distribution among the four provinces being left for them to determine by agreement.

Additional Grants to Newfoundland.—The Newfoundland Additional Grants Act of 1959 provides for the following grants to be paid to the Province of Newfoundland: for the fiscal year (ended Mar. 31) 1957-58, $6,600,000; 1958-59, $6,950,000; 1959-60, $7,300,000; 1960-61, $7,650,000; and 1961-62, $8,000,000. These payments are made following the recommendations of a Royal Commission appointed pursuant to the Terms of Union of Newfoundland with Canada. The Commission's report, dated May 31, 1958, deals with "the form and scale of additional financial assistance, if any, that might be required by the Government of the Province of Newfoundland to enable it to continue public services at the levels and standards reached subsequent to the date of the Union, without resorting to taxation more burdensome, having regard to capacity to pay, than that obtaining generally in the region comprising the Maritime Provinces of Nova Scotia, New Brunswick, and Prince Edward Island". At the Federal-Provincial Conference in February 1961, the Federal Government announced its intention of continuing the $8,000,000 per annum payment to Newfoundland for the five-year period of the new arrangements.

Section 3.—Provincial Public Finance

Provincial government accounting and reporting practices vary considerably so that certain adjustments to the *Public Accounts* figures are required in order to produce comparable statistics. For example, transactions relating to a specific function are sometimes excluded from ordinary account; therefore special or administrative funds of this nature have been added to provincial ordinary account in the tables of this Section.

As of 1952, the fiscal years of all provinces end on Mar. 31. Figures for the Northwest Territories are included from 1955.

Subsection 1.—Revenue and Expenditure of Provincial Governments

Table **25** shows net revenue and expenditure of provincial governments for the years ended Mar. 31, 1953-59, and Tables **26** and **27** give details of such revenue and expenditure for the fiscal years ended in 1958 and 1959. "Net general revenue" and "net general expenditure" are arrived at by first analysing the combined revenues and expenditures of capital account, current or ordinary account and those working capital funds and special funds for which separate accounts are kept. Then the following types of revenue are deducted from revenue and offset against related expenditure: interest, premium, discount and exchange; institutional revenue; grants-in-aid and shared-cost contributions from other governments; and capital revenue. Table **28** gives details of the amounts paid to other governments by provincial governments, according to nature of payment.

25.—Net Revenue and Expenditure of Provincial Governments, Years Ended Mar. 31, 1953-59

Province or Territory	1953	1954	1955	1956	1957	1958	1959
	NET GENERAL REVENUE						
	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Newfoundland	31,734	31,641	32,851	33,534	36,870	39,479	62,381
Prince Edward Island	7,288	7,671	8,154	8,044	7,570	9,441	12,568
Nova Scotia	46,647	49,348	51,418	54,329	57,881	64,480	75,752
New Brunswick	46,555	49,220	50,788	52,783	57,335	61,616	71,007
Quebec	284,703	299,417	339,108	412,745	445,930	515,384	556,723
Ontario	364,507	370,897	399,058	431,802	481,775	594,480	647,067
Manitoba	55,456	55,822	56,706	59,349	66,120	73,594	76,573
Saskatchewan	91,094	98,415	99,651	102,702	121,872	135,965	141,409
Alberta	144,504	185,851	175,097	225,326	241,317	246,013	236,370
British Columbia	185,368	186,337	199,658	230,773	273,059	281,796	295,722
Yukon Territory	..	1,460	1,632	1,785	1,703	2,056	1,885
Northwest Territories	..	..	707	916	1,125	1,269	1,412
Totals	**1,257,856**	**1,336,079**	**1,414,828**	**1,614,088**	**1,792,557**	**2,025,573**	**2,178,869**

25.—Net Revenue and Expenditure of Provincial Governments, Years Ended Mar. 31, 1953-59—concluded

Province or Territory	1953	1954	1955	1956	1957	1958	1959
	NET GENERAL EXPENDITURE[1]						
	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Newfoundland	28,881	32,802	39,086	42,419	44,346	47,878	61,530
Prince Edward Island	7,064	7,167	8,822	10,343	10,094	10,766	14,388
Nova Scotia	46,464	51,254	52,638	57,688	70,756	74,474	86,336
New Brunswick	44,927	47,813	50,990	54,451	59,339	63,486	70,928
Quebec	313,117	310,999	349,983	399,713	433,459	493,374	533,026
Ontario	372,019	384,215	420,999	488,932	552,155	656,481	741,936
Manitoba	42,023	46,702	48,552	51,940	62,867	75,615	97,821
Saskatchewan	80,187	85,783	96,145	100,781	110,132	124,353	137,513
Alberta	103,583	118,150	138,303	159,375	170,000	199,420	215,030
British Columbia	168,875	171,780	178,585	207,490	257,641	287,465	266,584
Yukon Territory	..	1,154	1,313	1,405	2,143	2,070	2,148
Northwest Territories	..	..	641	728	886	1,605	1,934
Totals	**1,207,140**	**1,257,819**	**1,386,057**	**1,575,265**	**1,773,818**	**2,036,987**	**2,229,174**

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[1] Excludes debt retirement.

26.—Details of Net General Revenue of Provincial Governments, Years Ended Mar. 31, 1958 and 1959

Source	1958	1959
	$'000	$'000
Taxes—		
Corporations	40,721	47,656
Income—		
Corporations	214,438	226,150
Individuals	41,295	47,773
Property	8,311	8,737
Sales—		
Alcoholic beverages	2,285	2,368
Amusements and admissions	20,608	22,043
Motor fuel and fuel oil	346,570	364,401
Tobacco	19,611	22,248
General	183,159	186,733
Other commodities and services	6,085	6,193
Succession Duties	52,645	55,797
Other	19,266	20,060
Totals, Taxes	954,994	1,010,159
Federal Tax Rental Agreements	354,354	399,100
Privileges, Licences and Permits—		
Liquor control and regulations	40,514	38,412
Motor vehicle	139,729	146,408
Natural resources	278,010	258,770
Other	20,307	22,897
Totals, Privileges, Licences and Permits	478,560	466,487
Sales and Services	28,435	33,303
Fines and Penalties	7,229	7,395
Government of Canada—		
Share of income tax on electric power utilities	7,261	8,483
Subsidies	21,996	60,197
Totals, Government of Canada	29,257	68,680
Government Enterprises and Other Funds—		
Liquor profits	164,544	175,338
Other	3,911	5,748
Totals, Government Enterprises and Other Funds	168,455	181,086
Other Revenue	1,441	3,573
Totals, excluding Non-revenue and Surplus Receipts	**2,022,725**	**2,169,783**
Non-revenue and Surplus Receipts—		
Refund of previous years' expenditure	1,199	5,197
Repayment of advances credited to revenue	1,570	3,804
Other	79	85
Totals, Non-revenue and Surplus Receipts	2,848	9,086
Totals, Net General Revenue	**2,025,573**	**2,178,869**

27.—Details of Net General Expenditure of Provincial Governments, Years Ended Mar 31, 1958 and 1959

Function	1958	1959
	$'000	$'000
General Government—		
Executive and administrative	76,244	87,121
Legislative	6,640	7,767
Research, planning and statistics	473	556
Totals, General Government	83,357	95,444
Protection of Persons and Property—		
Law enforcement	21,474	21,722
Corrections	28,739	30,231
Police protection	27,864	29,373
Other	30,081	35,010
Totals, Protection of Persons and Property	108,158	116,336
Transportation and Communications—		
Airways	37	41
Highways, roads and bridges	582,519	616,049
Railways	66	59
Telephone, telegraph and wireless	21	26
Waterways	4,927	5,856
Other	25	30
Totals, Transportation and Communications	587,595	622,061
Health and Social Welfare—		
Health—		
General	6,242	6,742
Public health	20,829	24,218
Medical, dental and allied services	10,382	11,801
Hospital care	264,580	287,496
Totals, Health	302,033	330,257
Social Welfare—		
Aid to aged persons	54,461	52,414
Aid to blind persons	2,002	2,152
Aid to unemployed employables and unemployables	30,132	39,793
Mothers' allowances	31,075	38,779
Child welfare	19,883	23,216
Labour	4,266	6,825
Other	26,262	28,365
Totals, Social Welfare	168,081	191,544
Totals, Health and Social Welfare	470,114	521,801
Recreational and Cultural Services	18,034	20,266
Education—		
Schools operated by local authorities	320,280	378,588
Education—concluded		
Universities, colleges and other schools	103,868	110,491
Education of the handicapped	4,545	5,654
Superannuation and pensions	16,072	18,125
Other	8,238	9,868
Totals, Education	453,003	522,726
Natural Resources and Primary Industries—		
Fish and game	14,810	15,191
Forests	47,833	53,844
Lands: settlement and agriculture	56,903	60,880
Minerals and mines	11,701	12,464
Water resources	8,319	8,706
Other	7,324	7,141
Totals, Natural Resources and Primary Industries	146,890	158,226
Trade and Industrial Development	10,448	11,823
Local Government Planning and Development	4,497	5,022
Debt Charges excluding Debt Retirement	54,844	55,351
Contributions to Local Governments—		
Shared-revenue contributions	11,923	988
Subsidies	41,347	59,338
Other	1,036	1,144
Totals, Contributions to Local Governments	54,306	61,470
Contributions to Government Enterprises	10,050	4,527
Other Expenditure	26,697	25,868
Totals, excluding Non-expense and Surplus Payments	**2,027,993**	**2,220,921**
Non-expense and Surplus Payments—		
Advances charged to revenue	808	1,415
Refunds of previous years' revenue	411	5,454
Other	7,775	1,384
Totals, Non-expense and Surplus Payments	8,994	8,253
Totals, Net General Expenditure (excluding debt retirement)	**2,036,987**	**2,229,174**

28.—Specified Amounts Paid to Other Governments by Provincial Governments, Year Ended Mar. 31, 1959

Nature of Payment	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Paid to Local Governments—													
Shared-revenue contributions[1]	—	—	7	—	—	824	—	—	157	—	—	—	988
Subsidies	288	345	1,026	4,839	500	23,590	2,506	—	15,062	11,057	64	61	59,238
Grants in lieu of local taxes on provincial government property[2]	7	5	—	—	—	922	205	—	—	—	—	—	1,139
Other	—	—	—	—	—	—	—	—	—	5[3]	—	—	5
Grants-in-Aid and Shared-Cost Contributions—													
Corrections	—	—	—	28	—	447	—	—	—	—	—	—	475
Police protection	—	—	—	—	—	201	—	—	—	—	—	—	201
Fire protection	33	2	—	—	1,000	148	—	—	—	—	—	—	1,183
Other protection	—	—	—	—	43	10	—	—	—	—	—	—	53
Highways, roads and bridges	761	11	—	205	4,492	53,890	4,093	5,343	4,356	185	22	11	73,369
Public health	136	—	—	—	—	2,103	60	203	1,040	341	—	—	3,883
Medical, dental and allied services	—	—	—	—	—	33	123	—	—	—	—	—	156
Hospital care[4]	—	—	1,041	—	—	—	1,167	9	617	—	—	—	2,834
Aid to aged persons (homes)	—	—	—	—	—	4,418	—	—	—	—	—	—	4,418
Aid to unemployed employables and unemployables	—	14	266	170	—	12,944	1,789	2,177	1,930	—	—	21	19,311
Child welfare	—	—	—	126	—	3,464	332	—	—	252	—	—	4,174
Other health and social welfare	—	—	—	—	361	10	33	—	—	—	—	3	407
Parks, beaches and other recreational areas	20	—	—	—	25	340	—	1	—	—	—	—	386
Physical culture	—	—	—	—	—	448	—	1	—	—	—	—	449
Schools operated by local authorities[5]	[6]	1,224	12,655	8,035	68,881[7]	129,529	15,102	20,173	49,225	44,817	[8]	104[9]	349,745
Lands—													
Settlement and agriculture	—	—	—	—	163	766	315	137	189	171	—	—	1,741
Other	—	—	—	—	150[10]	—	—	—	—	—	—	—	150
Local government planning and development	7	—	—	85	—	54	—	—	—	—	—	—	146
Civil defence	—	—	33	38	—	477	—	—	87	293	—	—	928
Housing	—	—	—	—	400	—	—	—	—	—	—	—	400
Other payments	—	—	100	10	125	945	18	53	74	119	—	—	1,444
Totals, Paid to Local Governments	**1,252**	**1,601**	**15,128**	**13,536**	**76,140**	**235,563**	**25,743**	**28,097**	**72,737**	**57,240**	**86**	**200**	**527,323**
Paid to Government of Canada—													
Police services—RCMP	512	71	601	468	—	—	763	926	1,256	1,576	—	—	6,173
Totals, Paid to All Governments	**1,764**	**1,672**	**15,729**	**14,004**	**76,140**	**235,563**	**26,506**	**29,023**	**73,993**	**58,816**	**86**	**200**	**533,496**

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[1] N.S.—Crown land leases; Ont.—share of liquor licences; Alta.—share of liquor fines.

[2] Excludes grants in lieu of taxes paid by provincial government enterprises.

[3] Reimbursement of taxes to newly incorporated or extended municipalities.

[4] Excludes amounts paid directly to municipal hospital boards.

[5] Includes grants paid directly to teachers in P.E.I., N.B., and Que.

[6] Primary and secondary schools are operated on a denominational basis; grants to denominational schools amounted to $12,153,000.

[7] Excludes $4,403,000 expenditures by the province to meet debt charges of various school corporations.

[8] Local schools are operated by the territorial government and by religious denominations.

[9] Local schools are operated by the Federal Government, religious denominations and school districts; amount shown was paid to school districts.

[10] Studies and works on water-courses.

Subsection 2.—Debt of Provincial Governments

Table **29** shows total bonded debt, by province, as at Mar. 31, 1956-60. Table **30** shows that the majority of bond issues are payable in Canada, but that the portion payable in the United States increased only from 19 p.c. in 1957 and 1958 to about 24 p.c. in 1960. Table **31** provides details of total direct and indirect debt of provincial governments as at Mar. 31, 1959 and 1960.

29.—Gross Bonded Debt (exclusive of Treasury Bills) of Provincial Governments, as at Mar. 31, 1956-60

Province and Year	Bonded Debt	Average Interest Rate	Average Term of Issue
	$'000	p.c.	yrs.
Newfoundland—			
1956	43,000	3.72	18.3
1957	43,000	4.00	18.3
1958	54,500	4.33	18.5
1959	56,500	4.44	18.7
1960	60,500	4.58	18.8
Prince Edward Island—			
1956	19,350	3.29	12.7
1957	19,600	3.55	13.6
1958	21,600	3.61	14.1
1959	22,096	3.56	13.5
1960	27,196	4.18	15.1
Nova Scotia—			
1956	220,636	3.49	18.2
1957	228,035	3.65	18.5
1958	246,660	3.70	18.3
1959	267,699	3.77	18.1
1960	270,739	3.58	16.3
New Brunswick—			
1956	217,237	3.64	17.7
1957	237,415	3.74	17.7
1958	231,221	3.78	18.0
1959	230,081	3.82	17.9
1960	248,451	3.93	17.9
Quebec—			
1956	467,558[1]	3.29	17.3
1957	481,734	3.37	17.5
1958	480,734	3.37	17.5
1959	469,384	3.35	17.3
1960	447,153	3.48	17.6
Ontario—			
1956	1,021,237[1]	3.57	21.6
1957	1,195,633[1]	3.67	21.1
Ontario—concluded			
1958	1,278,257[1]	3.75	20.4
1959	1,576,751[1]	3.87	19.8
1960	1,643,334[1]	3.98	19.2
Manitoba—			
1956	179,300	3.66	18.2
1957	178,776	3.71	17.9
1958	177,302	3.67	17.1
1959	204,026	3.37	14.3
1960	253,672	3.57	14.5
Saskatchewan—			
1956	204,566	3.68	19.0
1957	231,156	3.78	18.8
1958	285,315	4.01	17.9
1959	339,003	4.14	19.1
1960	364,081	4.28	18.7
Alberta—			
1956	75,517	2.86	16.2
1957	72,634	2.85	16.4
1958	20,965	2.84	16.1
1959	20,327	2.83	16.2
1960	18,889	2.80	16.4
British Columbia—			
1956	192,572	3.30	21.8
1957	181,673	3.33	22.6
1958	165,489	3.23	22.1
1959	162,770	3.24	22.3
1960	80,094	3.39	23.6
Totals—			
1956	**2,640,973**	**3.50**	**19.5**
1957	**2,869,656**	**3.59**	**19.5**
1958	**2,962,143**	**3.68**	**19.1**
1959	**3,348,637**	**3.76**	**18.8**
1960	**3,414,109**	**3.87**	**18.3**

[1] Excludes bonds assumed by the province.

30.—Gross Bonded Debt[1] (exclusive of Treasury Bills) of Provincial Governments, by Place of Payment, as at Mar. 31, 1956-60

Payable in—	1956	1957	1958	1959	1960
	$'000	$'000	$'000	$'000	$'000
Canada	1,766,728	1,952,308	2,100,360	2,315,297	2,384,101
United Kingdom	9,587	9,587	2,212	2,312	2,312
United Kingdom and Canada	2,974	2,974	2,974	2,974	2,974
United States	483,325	547,475	570,767	754,245	828,661
United States and Canada	221,964	205,921	141,079	132,846	97,207
United Kingdom, United States and Canada	156,395	151,391	144,651	140,963	98,854
Totals	**2,640,973**	**2,869,656**	**2,962,143**	**3,348,637**	**3,414,109**

[1] Excludes bonds assumed by the provinces.

31.—Provincial Government Direct and Indirect Debt (less Sinking Funds), as at Mar. 31, 1959 and 1960

Direct and Indirect Debt	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask	Alta.	B.C.	Yukon	N.W.T.	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
As at Mar. 31, 1959													
Direct Debt—													
Funded Debt—													
Bonded debt	56,500	22,096[1]	267,699	220,081	469,384	1,577,651[2]	204,026	339,003	20,327	162,770	—	—	3,349,537
Less sinking funds	6,660	5,282[1]	44,215	59,123	165,226	208,602	38,801	31,356	—	108,740	—	—	668,005
Net bonded debt	49,840	16,814	223,484	170,958	304,158	1,369,049	165,225	307,647	20,327	54,030	—	—	2,681,532
Treasury bills[3]	—	—	—	25,812	—	—	29,708	23,260	8,813	17,087	—	—	104,680
Net Funded Debt	49,840	16,814	223,484	196,770	304,158	1,369,049	194,933	330,907	29,140	71,117	—	—	2,786,212
Short-term treasury bills[4]	—	—	—	3,688	—	—	23,293	—	—	—	—	—	26,981
Temporary loans and overdrafts	1,127	6,410	2,880	4,299	—	—	11,612	—	—	—	—	—	26,328
Trust funds, savings and other deposits	—	2,320	1,204	914	13,764	86,516	2,504	—	21	12,624	100	—	119,967
Accounts and other payables	6,630	754	12,481	5,774	23,887	80,781[5]	2,544	3,899	11,582	26,204	2,421	600	177,557
Accrued interest and other accrued expenditure	206	176	2,696	4,756	4,456	17,447	5,889	3,585	180	1,435	45	—	40,871
Totals, Direct Debt (less Sinking Funds)	**57,803**	**26,474**	**242,745**	**216,201**	**346,265**	**1,553,793**	**240,775**	**338,391**	**40,923**	**111,380**	**2,566**	**600**	**3,177,916**
Indirect Debt—													
Guaranteed bonds or debentures	12,476	986	3,920	10,778	652,638	1,404,582	53,091	14,400	28,000	396,395	—	—	2,577,266
Less sinking funds	—	—	278	346	11,069	17,387	1,687	—	—	19,756	—	—	50,523
Net guaranteed bonds or debentures	12,476	986	3,642	10,432	641,569	1,387,195	51,404	14,400	28,000	376,639	—	—	2,526,743
Guaranteed bank loans	4,803	470	3,882	2,373	697	2,309	—	233	1,947	4,183	—	—	20,897
Municipal Improvement Assistance Act loans	—	2	282	136	953	—	11	167	149	398	—	—	2,098
Other guarantees	28,308	—	—	—	—	—	20,000	1,578	—	81,596	—	—	131,482
Totals, Indirect Debt (less Sinking Funds)	**45,587**	**1,458**	**7,806**	**12,941**	**643,219**	**1,389,504**	**71,415**	**16,378**	**30,096**	**462,816**	—	—	**2,681,220**
Totals, Direct and Indirect Debt (less Sinking Funds)	**103,390**	**27,932**	**250,551**	**229,142**	**989,484**	**2,943,297**	**312,190**	**354,769**	**71,019**	**574,196**	**2,566**	**600**	**5,859,136**
	$	$	$	$	$	$	$	$	$	$	$	$	$
Direct debt (*less* sinking funds) per capita[6]	129	260	339	366	69	261	272	375	33	71	197	29	182
Indirect debt (*less* sinking funds) per capita[6]	101	14	11	22	129	233	81	18	24	295	—	—	154

For footnotes, see end of table, p. 1076.

31.—Provincial Government Direct and Indirect Debt (less Sinking Funds), as at Mar. 31, 1959 and 1960—concluded

Direct and Indirect Debt	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
As at Mar. 31, 1960													
Direct Debt—													
Funded Debt—													
Bonded debt	60,500	27,196[1]	270,739	248,451	447,153	1,644,234[7]	253,672	364,081	18,889	80,094	—	—	3,415,009
Less sinking funds	8,750	5,125[1]	51,048	62,300	141,194	198,303	39,431	31,913	—	80,094	—	—	618,158
Net bonded debt	51,750	22,071	219,691	186,151	305,959	1,445,931	214,241	332,168	18,889	—	—	—	2,796,851
Treasury bills[3]	—	—	—	22,944	—	—	29,115	22,142	8,411	16,294	—	—	98,906
Less sinking funds	—	—	—	—	—	—	—	—	—	16,294	—	—	16,294
Net treasury bills[3]	—	—	—	22,944	—	—	29,115	22,142	8,411	—	—	—	82,612
Net Funded Debt	51,750	22,071	219,691	209,095	305,959	1,445,931	243,356	354,310	27,300	—	—	—	2,879,463
Short-term treasury bills[4]	—	—	7,651	3,240	—	—	35,846	—	—	—	—	—	46,837
Temporary loans and overdrafts	4,507	8,365	1,144	1,526	—	—	11,005	—	—	—	—	—	26,547
Trust funds, savings and other deposits	—	1,708	2,386	1,417	15,229	103,672	2,225	—	20	10,780	90	—	137,527
Accounts and other payables	5,735	525	16,450	8,890	28,803	73,596[5]	4,055	2,551	14,167	18,132	2,906	781	176,591
Accrued interest and other accrued expenditure	—	304	2,633	4,531	4,712	32,523	11,753	3,471	160	—	33	—	60,120
Totals, Direct Debt (less Sinking Funds)	**61,992**	**32,973**	**249,955**	**228,799**	**354,703**	**1,655,722**	**308,240**	**360,332**	**41,647**	**28,912**	**3,029**	**781**	**3,327,085**
Indirect Debt—													
Guaranteed bonds or debentures	12,737	1,420	3,855	10,714	759,083	1,489,000	74,785	10,000	130,000	504,671	—	—	2,996,265
Less sinking funds	—	—	384	355	14,460	20,078	2,221	—	583	29,592	—	—	67,673
Net guaranteed bonds or debentures	12,737	1,420	3,471	10,359	744,623	1,468,922	72,564	10,000	129,417	475,079	—	—	2,928,592
Guaranteed bank loans	6,487	108	5,846	2,135	762	3,543	170	188	1,932	3,407	—	—	24,578
Municipal Improvement Assistance Act loans	—	2	259	118	898	—	—	140	117	307	—	—	1,841
Other guarantees	27,545	—	—	—	—	—	20,000	1,819	—	76,997	—	—	126,361
Totals, Indirect Debt (less Sinking Funds)	**46,769**	**1,530**	**9,576**	**12,612**	**746,283**	**1,472,465**	**92,734**	**12,147**	**131,466**	**555,790**	—	—	**3,081,372**
Totals, Direct and Indirect Debt (less Sinking Funds)	**108,761**	**34,503**	**259,531**	**241,411**	**1,100,986**	**3,128,187**	**400,974**	**372,479**	**173,113**	**584,702**	**3,029**	**781**	**6,408,457**
	$	$	$	$	$	$	$	$	$	$	$	$	$
Direct debt (*less* sinking funds) per capita[6]	135	320	346	381	69	272	243	396	32	18	216	36	187
Indirect debt (*less* sinking funds) per capita[6]	102	15	13	21	146	242	103	13	102	346	—	—	173

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[1] Includes $50,000 bonds issued by the Provincial Sanatorium Commission; related sinking funds $43.000 at Mar. 31, 1959 and $45,000 at Mar. 31, 1960. [2] Includes bonds issued by the Ontario Junior Farmer Establishment Loan Corporation $11,000,000, and by the Ontario Municipal Improvement Corporation $36,850,000; also bonds assumed from issuing authorities $900,000. [3] Having a term of two or more years. [4] Having a term of less than two years. [5] Includes net liability of the province *re* Province of Ontario Savings Office $80,292,000 at Mar. 31, 1959, and $72,969,000 at Mar. 31, 1960. [6] Based on estimated population, see p. 165. [7] Includes bonds issued by the Ontario Junior Farmer Establishment Loan Corporation $14,000,000, and by the Ontario Municipal Improvement Corporation $38,350,000; also bonds assumed from issuing authorities $900,000.

Section 4.—Municipal Public Finance

Subsection 1.—Municipal Assessed Valuations and Taxation

Table 32 shows municipal assessed valuations and total exemptions, by province, for the year 1958 together with local taxes levied by municipalities and by some school authorities and total taxes outstanding at the end of the year. Assessment figures in the various provinces are not entirely comparable as there are still variations in methods, schedules and rates, not only between provinces but also between municipalities within the same province.

32.—Municipal Assessed Valuations and Taxation, by Province, 1958

Item		Newfoundland[1]	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
Assessed Valuations							
Taxable Valuations on which Taxes are Levied—							
Real property	$'000	7,911	34,482	555,212	415,189	7,167,283	7,276,869
Personal property	"	—	6,999	96,399	102,066	..	...
Business	"	2,871	7,722	31,077	23,416	..	928,865
Other[2]	"	—	—	15,460	4,144	—	—
Totals	$'000	10,782	49,203	698,148	544,815	7,167,283	8,205,734
Total exemptions[3]	$'000	..	10,050[4]	325,023	..	1,889,815[5]	1,458,061[4]
Taxation							
Tax levy	$'000	3,601	2,064	29,062	25,541	279,900	469,470
Tax Collections, Current and Arrears—							
Total	$'000	3,417	1,818	28,073	24,712	..	466,656
Percentage of levy	p.c.	94.9	88.1	96.6	96.7	..	99.4
Taxes receivable, current and arrears	$'000	1,580	714	9,061	8,613	38,039	48,924
Percentage of levy	p.c.	43.9	34.6	31.2	33.7	13.6	10.4
		Manitoba	Saskatchewan	Alberta	British Columbia	Yukon[6]	N.W.T.[7]
Assessed Valuations							
Taxable Valuations on which Taxes are Levied—							
Real property	$'000	970,597	1,057,373	1,387,033	1,562,992	517	3,288
Personal property	"	7,488	...	51,058	...	...	...
Business	"	41,771	51,489	64,159	..	—	2,092
Other[2]	"	—	294	—	—	—	—
Totals	$'000	1,019,856	1,109,156	1,502,250	1,562,992	517	5,380
Total exemptions[3]	$'000	227,474	583,220	298,194[4]	478,496[8]	..	513

For footnotes, see end of table, p. 1078.

32.—Municipal Assessed Valuations and Taxation, by Province, 1958—concluded

Item	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon[6]	N.W.T.[7]
Taxation						
Tax levy.................... $'000	56,966	71,348	92,261	102,657	134	320
Tax Collections, Current and Arrears—						
Total........................ $'000	57,081	70,690	92,149	102,259	131	263
Percentage of levy.......... p.c.	100.2	99.1	99.9	99.6	97.8	82.2
Taxes receivable, current and arrears................ $'000	11,344	18,462	19,215	5,658	60	71
Percentage of levy.......... p.c.	19.9	25.9	20.8	5.5	44.8	22.2

[1] City of St. John's only. [2] Includes: N.S.—household tax, Halifax; N.B.—occupancy tax, Fredericton, and rentals tax, Moncton; Sask.—special franchise. [3] Total of valuations assessed but exempt from taxation; excludes exempt property not assessed. [4] Incomplete. [5] Excludes permissive exemptions. [6] City of Dawson only. [7] Yellowknife only. [8] Excludes partial statutory and permissive exemptions.

Because of the considerable differences in the division of responsibility for services between the provincial governments and their respective municipalities, extreme caution should be exercised in using the figures in Table **32** as a basis for interprovincial comparisons of the relative burden of municipal taxation. Also, in Saskatchewan municipalities are required to levy certain taxes for and on behalf of the provincial government and for other special purposes for which there is no comparable situation in other provinces. The amounts of such taxes excluded in the Saskatchewan municipal levies in Table **32** are as follows:—

Tax	*1954*	*1955*	*1956*	*1957*	*1958*
	$	$	$	$	$
Hail........................	2,522,027	2,872,218	2,684,147	2,290,566	2,358,432
Telephone..................	900,545	904,568	897,318	941,769	968,974
Drainage..................	7,368	7,593	2,834	11,450	50,907
TOTALS................	3,429,940	3,784,379	3,584,299	3,243,785	3,378,313

Subsection 2.—Municipal Revenue, Expenditure and Debt

Tables **33**, **34** and **35** show comparative totals and details of gross ordinary revenue and expenditure of municipal governments, by province. Table **36** sets out the direct and indirect debt of local governments for the year 1958. The amounts shown include debt incurred for general and school purposes, debenture debt incurred for and by utilities, and debenture debt incurred by certain special areas organized to provide specific local services.

33.—Gross Ordinary Revenue and Expenditure of Municipal Governments, by Province, Fiscal Years Ended Nearest Dec. 31, 1958

Province	Gross Ordinary Revenue	Gross Ordinary Expenditure	Province or Territory	Gross Ordinary Revenue	Gross Ordinary Expenditure
	$'000	$'000		$'000	$'000
Newfoundland................	5,950	5,228	Saskatchewan..............	93,733	92,773
Prince Edward Island.........	2,718	2,659	Alberta......................	140,808	139,485
Nova Scotia..................	38,917	39,052	British Columbia...........	149,091	146,427
New Brunswick...............	35,037	34,246	Yukon......................	355	351
Quebec........................	352,922	352,702	Northwest Territories.......	490	519
Ontario.......................	668,057	658,992			
Manitoba......................	78,120	76,964	**Totals**....................	**1,566,198**	**1,549,398**

34.—Details of Gross Ordinary Revenue of Municipal Governments, Fiscal Years Ended Nearest Dec. 31, 1958

Source	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Taxes—													
Municipal Purposes—													
Real property	2,027	376	9,827	2,185	88,130	225,627	24,359	31,019	37,082	48,514	134	134	469,414
Personal property	7	163	2,738	3,968	...	...	[1]	...	1,921	...	...	...	8,797
Business	814	212	1,398	1,579	17,500[2]	28,795[2]	4,448	1,515[2]	5,182	2,998	...	[3]	64,441
Poll	117	135	991	2,046	...	171	10	897	—	...	...	6	4,373
Amusement	106	...	...	...	2,800[2]	...	...	280	...	...	...	...	3,186
Sales	348	...	...	...	36,580	...	385	450	...	...	...	...	37,763
Household and tenant	...	...	273	197	...	...	...	...	...	...	...	...	470
Other	19	—	—	125	3,760	—	57	587	—	690	—	—	5,238
Special assessments (owners' share) and charges	[3]	6	194	165	17,433	16,198	4,387	1,983	7,492	5,020	—	73	52,951
School purposes	163	1,172	13,641	15,276	113,697[4]	198,679	23,320	34,617	40,584	45,435	...	107	486,691
Totals, Taxes	3,601	2,064	29,062	25,541	279,900	469,470	56,966	71,348	92,261	102,657	134	320	1,133,324
Licences and permits	120	49	370	210	5,358	6,777	1,265	1,831	2,018	5,627	32	9	23,666
Interest, tax penalties, etc.	5	3	389	207	3,052	4,730	1,055	1,184	1,324	1,720	5	3	13,677
Contributions, Grants and Subsidies—													
Governments	1,071	357	5,292	6,524	6,116	109,429	9,109	7,738	23,720	21,736	123	137	191,352
Government enterprises	162	112	609	415	22,742	4,749	2,438	4,247	6,933	2,597	9	15	45,028
Other	179	1	290	22	1,896	1,055	530	582	107	337	—	—	4,999
Debenture debt charges recoverable	287	75	940	1,136	21,928	31,783	3,810	2,694	6,313	3,609	34	—	72,609
Miscellaneous revenue	487	50	1,353	686	11,930	29,418	1,851	3,976	7,625	10,034	18	5	67,433
Totals, Revenue	**5,912**	**2,711**	**38,305**	**34,741**	**352,922**	**657,411**	**77,024**	**93,600**	**140,301**	**148,317**	**355**	**489**	**1,552,088**
Surplus from previous years	38	7	612	296	—	10,646	1,096	133	507	774	—	1	14,110
Grand Totals	**5,950**	**2,718**	**38,917**	**35,037**	**352,922**	**668,057**	**78,120**	**93,733**	**140,808**	**149,091**	**355**	**490**	**1,566,198**

[1] Included with real property. [2] Estimated. [3] Less than $500. [4] Real property $92,758; sales tax $20,939.

35.—Details of Gross Ordinary Expenditure of Municipal Governments, Fiscal Years Ended Nearest Dec. 31, 1958

Function	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
General government	661	171	2,928	2,672	32,454	43,401	4,805	6,444	7,376	9,910	43	58	110,923
Protection of persons and property	277	261	4,987	3,519	43,521	80,983	8,969	6,107	13,782	21,660	62	39	184,167
Public works	1,304	236	2,133	2,151	50,387	97,111	12,392	18,867	22,038	13,470	68	71	220,228
Sanitation and waste removal	488	7	894	455	9,093	29,122	2,759	2,344	4,722	4,924	36	28	54,872
Health	9	13	3,479	1,840	16,701	23,535	2,890	5,064	9,338	2,790	—	15	65,674
Social welfare	...	20	1,570	1,109	3,941	32,922	3,347	3,063	3,319	10,373	—	46	59,710
Education	163	1,056	12,295	12,842	73,819	160,961	21,515	32,725	31,689	42,815	...	107	389,987
Recreation and community services	191	66	900	627	9,652	21,483	1,743	2,550	3,990	6,538	12	18	47,770
Debt Charges—													
Debenture	957	605	7,048	6,451	98,923	119,511	10,957	8,833	30,368	21,664	63	16	305,396
Other	101	46	800	526	2,151	7,213	192	478	486	688	—	1	12,682
Utilities and other municipal enterprises (deficits and levies)	304	39	17	501	2,951	2,562	1,033	356	1,816	1,474	34	61	11,148
Provision for reserves	37	41	803	459	1,542	6,078	1,788	1,435	1,302	2,000	25	1	15,511
Capital expenditure out of revenue	647	70	622	325	6,006	20,178	2,851	3,080	6,023	6,260	2	45	46,119
Joint or special expenditure	—	—	—	—	—	5,292	339	—	565	279	—	—	6,475
Miscellaneous expenditure	89	28	401	751	1,561	7,282	414	1,427	2,550	1,571	6	13	16,093
Totals, Expenditure	**5,228**	**2,659**	**38,877**	**34,238**	**352,702**	**657,634**	**75,994**	**92,773**	**139,364**	**146,416**	**351**	**519**	**1,546,755**
Deficit from previous years	—	—	175	8	—	1,358	970	—	121	11	—	—	2,643
Grand Totals	**5,228**	**2,659**	**39,052**	**34,246**	**352,702**	**658,992**	**76,964**	**92,773**	**139,485**	**146,427**	**351**	**519**	**1,549,398**

36.—Debt of Municipal and School Corporations, as at Fiscal Year-Ends Nearest to Dec. 31, 1958

Direct and Indirect Debt	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Direct Debt (less Sinking Funds)—													
Debenture debt	15,601	7,366	75,106	78,495	1,045,370	1,248,234	120,503	110,326	351,195	354,751	1,004	101	3,408,052
Less sinking funds	94	1,557	7,708	6,762	13,500	19,615	17,134	9,067	2,805	40,439	—	—	118,681
Net debenture debt	15,507	5,809	67,398	71,733	1,031,870	1,228,619	103,369	101,259	348,390	314,312	1,004	101	3,289,371
Temporary loans and bank overdrafts	1,055	964	10,352	7,021	69,154	86,035	8,496	4,903	7,938	8,645	—	45	204,608
Accounts payable and other liabilities	2,651	281	10,052	5,686	95,975	113,016	9,695	17,559	36,950	20,781	98	55	312,802
Totals, Direct Debt (less Sinking Funds)	**19,213**	**7,057**	**87,802**	**84,440**	**1,196,999**	**1,427,670**	**121,560**	**123,721**	**393,278**	**343,738**	**1,102**	**201**	**3,806,781**
Indirect Debt (less Sinking Funds)—													
Guaranteed bonds or debentures	—	—	926	4,201	—	6,379	3,045	—	—	—	—	—	14,551
Less sinking funds	—	—	290	—	—	—	—	—	—	—	—	—	290
Net guaranteed bonds or debentures	—	—	636	4,201	—	6,379	3,045	—	—	—	—	—	14,261
Guaranteed bank loans	—	—	4	—	—	—	—	—	—	—	—	—	4
Totals, Indirect Debt (less Sinking Funds)	—	—	**640**	**4,201**	—	**6,379**	**3,045**	—	—	—	—	—	**14,265**
Grand Totals	**19,213**	**7,057**	**88,442**	**88,641**	**1,196,999**	**1,434,049**	**124,605**	**123,721**	**393,278**	**343,738**	**1,102**	**201**	**3,821,046**

CHAPTER XXII.—NATIONAL ACCOUNTS, SURVEY OF PRODUCTION AND INTERNATIONAL INVESTMENTS

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Section 1.—National Accounts*

The national accounts constitute a set of accounting summaries for the nation as a whole and portray economic activity in terms of transactions taking place between different sections of the economy. By combining and summarizing these operations into their various classes, information may be obtained on the functioning of the economy which is of particular interest to governments concerned with problems of full employment, taxation and prices, and to businessmen concerned with programs of investment and marketing.

This measurement of the nation's output is in terms of established market prices; hence it is necessary to keep in mind that the value of the nation's production may change because of price variations as well as through increase or decrease in volume of output.

Data are available showing volume changes in gross national expenditure in addition to the value figures. Gross national expenditure is shown in Table 4 in constant dollars (i.e., in terms of 1949 prices). Because the gross national expenditure equals the gross national product, these data also reflect volume changes in the production of goods and services as measured by the gross national product. For all other tables the data are expressed in current dollars so that year-to-year changes must be considered in relation to price changes over the period.

National accounts calculated on a quarterly basis are a logical extension of the annual national accounts and have been published since 1953. However, their preparation on a reliable and analytically useful basis is rather more difficult because of the scarcity of quarterly data, special problems arising from the measurement of farm production and problems in connection with seasonal variation.

The tables in this Section cover the more important aspects of the national income analysis in annual terms. Table **1** gives total gross national product in current and constant dollars for the years 1926-60. Tables **2** and **3** show the main aggregates of national income, gross national product, gross national expenditure and their components; other tables are included to show the source and disposition of personal income, government revenue and expenditure and personal expenditure on consumer goods and services.

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*Prepared in the National Accounts Division, Dominion Bureau of Statistics.

National Income.—Net national income at factor cost measures the current earnings of Canadian factors of production (i.e., land, labour, capital) from productive activity. It includes wages and salaries, profits, interest, net rent and net income of farm and non-farm unincorporated business.

Gross National Product.—Gross national product, by totalling all costs arising in production, measures the market value of all final goods and services produced in the current period by Canadian factors of production. It is equal to national income plus net indirect taxes (indirect taxes less subsidies), plus capital consumption allowances and miscellaneous valuation adjustments.

Personal Income.—Personal income is the sum of current receipts of income whether or not these receipts represent earnings from production. It includes transfer payments from government (such as family allowances, unemployment insurance benefits and war service gratuities) in addition to wages and salaries, net income of unincorporated business, interest and dividends and net rental income of persons. It does not include undistributed profits of corporations and other elements of the national income not paid out to persons.

Gross National Expenditure.—Gross national expenditure measures the same aggregate as gross national product, namely, total production of final goods and services at market prices, by tracing the disposition of production through final sales to persons, to governments, to business on capital account (including changes in inventories) and to non-residents (exports). Imports of goods and services, including net payments of interest and dividends to non-residents, are deducted since the purpose is to measure only Canadian production.

Economic Activity in 1960.—The recovery in economic activity in Canada, which had begun in 1958 and continued throughout 1959, was interrupted in the course of 1960. Signs of weakness were particularly evident in the second quarter but by the fourth quarter expansionary forces were gaining ground. These conflicting movements combined to yield a gross national product total of $35,959,000,000 for the year, about 3 p.c. higher than the 1959 total. Part of the increase was attributable to higher prices, leaving a gain in volume of about 2 p.c., which compares with a postwar average of 4 p.c. per annum.

The pattern of developments within the year was one of slackening in final demand in the first quarter and a decline in both final demand and the value of production in the second quarter; the third quarter brought some recovery in final purchases but this was not fully transmitted to production since the bulk of these new requirements were met by drawing down stocks; both final demand and the building up of stocks contributed elements of strength in the fourth quarter but a decline in demand for Canadian export products was a partially offsetting influence.

The principal support to the level of economic activity in 1960 came from further expansion in government outlays for goods and services, from rising consumer purchases of non-durable goods and services, and from vigorous growth in the demand for Canadian export products on the part of industrialized overseas countries in Europe and elsewhere, which more than counteracted an easing in demand on the part of the United States. The weakness in end-product demand was centred in business expenditures for plant and equipment, in outlays for housing and in consumer purchases of durables other than automobiles. Business investment in plant and equipment failed to match the expectations expressed in the survey of intentions and for the year as a whole were slightly lower than in 1959. Outlays for housing were apparently affected by changes in basic demand factors as well as by the virtual withdrawal of the chartered banks from lending activity under the National Housing Act and the sharp contraction in direct lending by the Central Mortgage and Housing Corporation. Thus, outlays for new residential construction were lower by about 15 p.c. A drop in consumer purchases of household appliances, furniture and home furnishings probably was associated in part with the decline in housing. A sharp drop in inventory accumulation in the second quarter and a shift to liquidation in the third quarter reinforced the downward pressures inherent in the movements of some of the components of final demand.

The slackening in economic activity during 1960 was also reflected in changes in the direction and magnitude of income flows. The advance in labour income of about 4 p.c. during the year was little more than half as large as that achieved in 1959, and the earnings of non-farm unincorporated business enterprises declined. While total personal income was higher by 4 p.c., this compared with a gain of 6 p.c. in 1959. Earnings of corporations in 1960 fell below the 1959 level by about 6 p.c. compared with a very substantial increase in the preceding 12-month period. At the same time, the tax revenues of governments were adversely affected by the reduced flow of income to the business sector and by the smaller rate of advance in personal incomes, with the result that total government revenues rose by a narrower margin than in 1959.

Production, Employment and Prices.—Indicators of the physical volume of output in 1960 showed an advance of about 2 p.c. While both the goods-producing and service-producing industries shared in this gain, the major contribution came from the latter group. Output was up significantly in all the service components but movements in the goods-producing group diverged quite widely.

Among the primary industries, agricultural output was moderately higher in 1960, reflecting a substantially larger crop of grain of better quality, a decline in the production of livestock and poultry, and little change in the production of other farm products. While output in forestry recorded a gain of 11 p.c. over 1959 (which was a strike-affected year), it remained below the record achieved in 1956.

A 1-p.c. increase in mining output was the outcome of fairly small and largely offsetting movements in the four components of the industry. Output in metal mining was lower by 2 p.c., reflecting a pronounced drop in the production of uranium and a substantial decline in the output of iron ore, which were only partly offset by sharp expansion in the production of nickel, copper and lead. Output in quarrying, which is closely tied to the demands of the construction industry, was down by 5 p.c. All three components—coal, petroleum and natural gas—contributed to a 5-p.c. increase in output of the fuels group; the gain in coal and in petroleum was moderate but an increase of 17 p.c. occurred in output of natural gas. A 2-p.c. increase in the output of the non-metals group was accounted for by expanded output of asbestos.

For the third year in succession, the volume of output declined in the construction industry. The drop of nearly 5.5 p.c. in 1960 was associated with an estimated 17-p.c. fall in the volume of residential construction and a fractional decline in the volume of non-residential construction.

A 2.3-p.c. increase in the output of non-durable goods combined with a 1.7-p.c. decline in durables kept manufacturing production in 1960 fractionally higher than in 1959. Most of the non-durable goods industries recorded gains but they were small, with the important exception of chemicals for which output rose 12 p.c. A substantial decline in output occurred in rubber products and leather products and a moderate decline was recorded by the textile industry.

Only two of the durable goods industries showed expanded production in 1960. An 8-p.c. advance in the output of non-ferrous metal products reflected the buoyancy of overseas export demand and slightly higher production of transportation equipment reflected increased output of motor vehicles which more than offset lower production of other equipment. In the woods products industry (strike-affected in 1959), production was only slightly lower, despite weakness in the demand from the construction industry in both Canada and the United States. Production of electrical apparatus and supplies dropped 2 p.c. and both non-metallic minerals and iron and steel products dropped 6 p.c.

The volume of activity in trade was up about 1.5 p.c. in 1960, with wholesale and retail trade showing the same rates of increase. Within retail trade, movements were mixed—food chains continued their steady expansion, raising the volume of their activity by 5 p.c., but gains in other trades were for the most part small. One of the more important trades recording less activity in 1960 was lumber and building material dealers, which was down 10 p.c.

Output of the utilities continued to make relatively large gains in 1960. The 11-p.c. increase reflected an advance of 9 p.c. in the production of electricity and another major increase in the distribution of natural gas.

The volume of traffic handled by the transportation industry as a whole rose nearly 2 p.c., despite a 3-p.c. decline in railways and in bus systems. Railway revenue carloadings of all major commodities except pulpwood and ores and concentrates were lower in volume; the largest declines were in livestock, iron ore, building materials other than lumber and timber, and automobiles, trucks and parts. The other components of the transportation industry—trucking, oil pipelines, shipping, and air transport—recorded gains ranging from 3 p.c. in trucking to 13 p.c. in air transport. The volume of output in the communications industry continued to rise and was up 5 p.c. in 1960. The other service-producing industries also recorded further expansion in activity, amounting to 3 p.c. in financial services and to about 2 p.c. in government service and in other services as a group.

The moderate increase in the volume of the nation's production in 1960 was accompanied by a roughly equivalent gain in employment, which was up 1.7 p.c. in total. An outstanding feature of the labour market was the continued strength of demand in those areas of employment—notably trade and services—where women constitute a large proportion of the labour force, as contrasted with the weakness of demand in those areas—notably durable goods manufacturing and construction—where the work force is predominantly male. The consequence of this pattern in the demand for labour was that there was only a fractional gain in the number of men employed in 1960 in contrast to a 6-p.c. increase in the number of women employed.

The increase in employment in 1960 of 1.7 p.c. fell somewhat short of the growth of the labour force, which amounted to 2.8 p.c. Unemployment as a percentage of the labour force rose from an average of 6 p.c. in 1959 to 7 p.c. in 1960. Participation rates for the population 14 years of age or over rose from 53.9 p.c. to 54.3 p.c., reflecting a slight decline in the male participation rate and a considerable increase in the female participation rate. This development was associated with the relatively favourable opportunities in the market for women workers.

Final product prices drifted upward slightly between 1959 and 1960, the aggregate increase being about 1.5 p.c. This was the smallest year-over-year price increase for any year since 1955 when the increase was 1.3 p.c., and compares with an average annual price rise of 2.5 p.c. for the years 1956 to 1960. The increase in the price of consumer goods and services was small and was virtually unchanged from the increase that occurred between 1958 and 1959. The prices of both capital goods and exports showed a more moderate advance than between 1958 and 1959. Prices of imported goods, however, which declined fractionally in 1959, rose somewhat in 1960, reflecting, in large part, a lower rate of exchange on the Canadian dollar.

Components of Gross National Expenditure.—While consumer spending rose somewhat more than consumer disposable income in 1960, it failed to match the gains of the two preceding years. The increase in 1960 amounted to 4 p.c., compared with nearly 6 p.c. in 1958 and 1959. Whereas in these two years, and in 1959 particularly, the market for consumer durables expanded, in 1960 there were important areas of weakness and spending on durables showed only a fractional gain. At the same time, expenditure on non-durable goods rose about 4 p.c., the same rate of increase as in 1959, while expenditure on services rose by more than 5 p.c. compared with a gain of nearly 8 p.c. in the preceding year.

Of the increase in total consumer spending in 1960, somewhat more than 1 p.c. was accounted for by higher prices in the consumer sector, the smallest rate of increase in recent years. Services continued to account for the major part of the advance in consumer prices; prices of non-durables were somewhat higher but prices of durables edged downward. The approximately 3-p.c. rise in real consumption represented a gain of about 1 p.c. in per capita terms.

All components of services contributed to the 5.5-p.c. advance in expenditure but the sharpest rate of increase was for hospital and medical care, which rose by 9 p.c. Consumer purchases of most major categories of non-durables rose in 1960—food purchases by 3 p.c., clothing by 2 p.c., and alcohol and tobacco by 3.5 p.c. and 5.5 p.c., respectively. The increase in expenditure on non-durables as a group represented a gain of about 1 p.c. in real per capita consumption. Among the durables, an increase of 3.5 p.c. in purchases of new and used cars was almost offset by lower expenditures for most other durables. Statistics of factory shipments of household durables were, in general, either unchanged or considerably lower. For example, shipments of washing machines were down 10 p.c., of electric stoves 12 p.c., of radios 10 p.c. and of television sets 16 p.c. On the other hand, there was an increase of over 60 p.c. in shipments of home freezers. The widespread weakness in the demand for houshold durables was probably related in part to the much reduced level of activity in housing. A 7-p.c. increase in the sale of new passenger cars to persons in 1960 compares with an increase of 10 p.c. in the preceding year. As in 1959, the rise in sales of British and European cars was large relative to the increase in sales of North American cars, although the disparity was less marked in 1960. Sales to persons of British and European cars were up nearly 20 p.c. and sales of North American cars less than 5 p.c.

With consumer outlays higher by 4 p.c. in 1960 and disposable income showing a smaller gain of 3.5 p.c., the rate of personal saving fell. In 1959 personal saving amounted to 7.2 p.c. of disposable income; in 1960 the proportion was 6.7 p.c.

Turning to the investment sector, business gross fixed capital formation was estimated at $6,600,000,000 in 1960, some 4 p.c. lower than in 1959. The decline was centred in residential construction. Expenditures on plant and equipment were close to the level of the previous year, the construction component being slightly lower and the machinery and equipment component unchanged. Most of the changes in business investment outlays (excluding housing) were fairly small. Expenditures were higher in the three primary industry groups of mining, forestry and agriculture. In manufacturing, outlays rose by 4 p.c. and in institutional services by over 7 p.c. Capital outlays declined in the construction industry, in trade, finance, insurance and real estate, and in commercial services. However, the major decrease in 1960, amounting to nearly 5 p.c., occurred in the large investment program being carried on by the utilities.

Within manufacturing industries, changes in capital outlays were mixed and to some extent offsetting. The manufacturing industries reporting substantially larger capital outlays in 1960 were iron and steel, paper products and chemical products. On the other hand, capital expenditures in transportation equipment and in non-metallic mineral products were considerably lower than in 1959.

Most of the utilities carried out smaller capital programs in 1960 than in 1959. Among the major utilities, much the largest reduction took place in outlays by the railway group. The outlays of electric power utilities were considerably lower than in 1959 and much below the extremely high levels reached in several previous years. Expenditures by the telephone industry were considerably higher, as were those of "other utilities"—a miscellaneous group which includes air transport, warehousing, oil and gas pipelines and toll highways and bridges; the increase in the latter group was attributable to higher expenditures on aircraft and on the construction of gas and oil pipelines.

Expenditure on residential construction in 1960 fell to $1,476,000,000, a drop of 15 p.c. from the level of 1959. Housing starts showed marked improvement in the second half of the year but the 109,000 units started during the year as a whole constituted a decrease of almost 23 p.c. compared with 1959 and was the lowest number since 1953. As previously stated, this decline in starts mainly reflected the sharp contraction in lending by the chartered banks and by the Central Mortgage and Housing Corporation, even though offset to some extent by the expansion in lending activity by life insurance, loan and trust companies under the National Housing Act. Basic demands for housing may also have been affected by lower levels of family formation in recent years. There was a substantial carryover of uncompleted houses at the beginning of the year so that completions in 1960 fell only 15 p.c. The distinct improvement in housing starts in the course of 1960 was attributable to a number of factors. During the year the Central Mortgage and Housing Corporation began to accept applications for loans and steps were taken to remove or relax restrictions on direct lending. Moreover, as credit conditions eased, mortgage lending became more attractive to approved lenders and, as already mentioned, the life insurance, loan and trust companies began to lend in volume.

The build-up of goods in inventory in 1960 continued at a rate very little changed from the previous year, in comparison with the large-scale swings in the rates of change which occurred between 1957 and 1958 and between 1958 and 1959. This annual comparison, however, conceals the important impact which shorter run changes in business inventories had on production during 1960. As the rate of over-all economic activity weakened early in the year, the pronounced rate of inventory accumulation evident in the first quarter fell sharply in the second quarter, and by the third quarter some liquidation of stocks was taking place. During the final three months of the year, however, developments in the inventory sector were once more placing new demands on production, and a limited build-up of stocks occurred.

The data on manufacturing industries suggest that some of the fairly heavy build-up of stocks in manufacturers' hands in the first half of the year was involuntary, occurring against a background of falling shipments and a rapidly contracting backlog of unfilled orders. Although stocks at all levels of fabrication increased, the accumulation was most marked in finished goods, suggesting that cut-backs in production were not sufficient to offset falling demand. The accumulation in the first two quarters of the year was widespread, although in the second quarter it was tempered by a substantial drawing down of stocks in the tobacco and paper industries.

During the second half of the year there was a general lowering in the level of manufacturers' stocks. As shipments began to rise, the level of raw materials and goods in process was lowered. Stocks of finished goods, after eight months of uninterrupted increase, finally levelled off and in the last two months of the year contracted; despite this, in certain durable goods industries the ratio of finished goods to shipments remained at a high level in comparison with past periods.

In contrast to the slow-down in the rate of liquidation in over-all manufacturing, the rate of liquidation in durable goods increased between the third and fourth quarters. The primary cause of this was the heavy drawing down of stocks in the iron and steel industry, supported by continued liquidation in both the transportation and electrical equipment industries. The impact of these depletions was offset to some extent by an increased rate of accumulation in non-ferrous metal products.

Inventory movements of non-durables exerted a moderating influence on the pace of liquidation of total manufacturers' stocks, as an irregularly high build-up of stocks in the tobacco industry and some additions to food and beverage stocks took place. The increase in the tobacco industry reflected the earlier-than-normal processing of an unusually large crop in 1960.

The build-up in retailers' stocks, which had been under way since the early part of 1958, continued at an increased rate in 1960, although the rate of increase slackened noticeably in the second and fourth quarters. The dominating features of the year were: the steady increase of stocks in motor vehicle dealers hands until the fourth quarter, at which time a marked increase in sales caused a small drop in the level of stocks; the accumulation of food stocks, which was heavy in the first and last quarters; and the 'swing' in clothing stocks, which increased in the first and third quarters and were drawn down heavily in the second and fourth. The broad movements in retail stocks in 1960 conform closely to the over-all pattern of changes in consumer spending. Consumer spending fell slightly in the first quarter and increased only fractionally in the third quarter, at which time retail stocks rose sharply; in the second and fourth quarters, when consumer spending advanced strongly, retail stocks rose at a more modest rate.

Stocks in the hands of wholesalers, after increasing in the first two quarters, fell in the third in line with the general lowering which took place in manufacturers' stocks. The liquidation was widespread and in a number of trades continued into the fourth quarter; however, it was offset in part in the fourth quarter by the sharp increases in stocks of industrial machinery and equipment, and hardware and other furnishings, both of which may have reflected the upturn in fixed investment in machinery and equipment and the improved outlook for building, particularly residential construction.

The dominant feature of the international trading environment in 1960 was the vigorous expansion in the economies of a number of industrialized overseas countries and the hesitant behaviour of the North American economy. In this situation, Canadian exports of goods and services rose to $7,000,000,000, a gain of 4.2 p.c. over 1959, with the bulk of the increase accounted for by the merchandise items. At the same time, the demand for imports was on a declining trend throughout most of the year, and for 1960 as a whole merchandise imports showed little change from 1959. The outflow of payments on service account, however, continued to rise but more moderately than in earlier years. The consequence of these trends was a contraction in the deficit on Canada's current account (on the national accounts basis) from about $1,400,000,000 in 1959 to $1,200,000,000 in 1960.

The strong demand for Canadian export products originating in the countries of Western Europe, the United Kingdom, and in some other overseas countries (notably Japan and Australia) raised exports to overseas destinations by 20 p.c. This increased strength of demand became evident in the latter part of 1959 and persisted throughout 1960. By contrast, exports to the United States were about 5 p.c. lower for the year as a whole, and showed a declining trend within the year. Thus the year was characterized by an abrupt change in the direction of export trade within a rising total. The largest part of the increased demand was for major export staples of primary and semi-processed materials but there were also gains in some manufactured goods, particularly in the United Kingdom where restrictions on many imports had been removed. Some of the largest gains occurred in such metals as aluminum, copper, nickel, zinc, primary steel and rolling-mill products, and in asbestos and petroleum. Other leading exports such as pulp and paper, lumber and chemicals also rose, but iron ore showed little change. Textiles and non-farm machinery are among the manufactured goods making impressive gains. By contrast, agricultural exports dropped, including wheat, other grains and flour, and cattle and dairy products. Shipments of fish, farm implements and uranium were also lower.

While total receipts from services rose moderately in 1960, the individual items in the invisible account showed mixed movements. Receipts from tourist trade rose considerably and there was some increase in gold available for export. However, receipts from freight and shipping were somewhat lower, as were receipts from interest and dividends. The decline in the latter largely reflects lower dividends from foreign subsidiaries of certain Canadian manufacturing companies.

With no expansion in outlays for new plant and equipment in 1960 and a drop in the rate of investment in business inventories, commodity imports eased a little, declining by about one-half of 1 p.c. The relative stability in the total was accompanied by stability in most of the major groups. Increases were generally small and confined to comparatively few items, some of which were affected by special circumstances. Among the increases were such varied items as vegetables, cotton and textiles, iron ore, crude petroleum, automobiles and aircraft. Reductions were more numerous and often small, although the drop in petroleum products, tractors and agricultural implements was comparatively large. Imports of other kinds of equipment remained high.

Payments for services continued to rise in 1960 and were about 2 p.c. higher than in the previous year. Most of the increase was in two items of the account—tourist expenditures and miscellaneous services. Payments of interest and dividends, in total, remained about the same. The large net sales of provincial, municipal and corporation bonds in 1959 and the first half of 1960 raised significantly the level of interest payments. On the other hand, dividend payments declined. This decline, which was concentrated in the closing quarter of the year, reflected smaller remittances by a number of large Canadian companies to their non-resident parents.

The remaining component of demand—government expenditure on goods and services—estimated at $6,700,000,000 in 1960, was 5 p.c. higher than in 1959. All of this increase was attributable to provincial and municipal governments; Federal Government expenditures were moderately lower. The major part of the 13-p.c. advance in provincial government expenditures represented higher outlays on highways, although a variety of other provincial activities in the fields of public works, development, health and education also contributed. The gain in municipal outlays was estimated at 10 p.c., attributable to increased wages and salaries and higher capital expenditures.

While federal defence expenditures were almost unchanged, outlays for other purposes were substantially lower. This decrease reflected, among other things, a lower level of capital investment, a liquidation of stocks held by the Agricultural Stabilization Board and lower out-payments from the Colombo Plan Fund.

Transfer payments from governments to persons in 1960 were higher than in 1959 by 13 p.c. A large part of the 11-p.c. advance in federal transfer payments was accounted for by higher unemployment insurance payments (+$75,000,000), reflecting not only an increase in unemployment but also amendments to the Unemployment Insurance Act introduced in the course of 1959, which extended the duration of benefits and increased rates of benefit for some classes of insured persons. There was also a considerable increase in payments to western grain producers (+$38,000,000) and to universities (+$29,000,000). Old age security payments and family allowances continued to rise by amounts of about $15,000,000 each. At the provincial level, transfer payments advanced 18 p.c. over the previous year. Among the contributing factors were higher payments for direct relief, increases in payments to disabled persons and old age and blind pensioners, and higher grants to hospitals, universities and charitable organizations.

These changes on the expenditure side of the government accounts, together with higher interest payments on the public debt and increased subsidies, brought about an increase in total net government outlays of about 8 p.c. At the same time, government revenues rose by 5 p.c., reflecting increases in personal direct taxes (associated with higher rates effective for the whole year), and increases in indirect taxes from higher excise taxes at the federal level and from increased real property taxes at the municipal level. Investment income and employer and employee contributions to social insurance and government pension funds also increased substantially. However, a substantial drop occurred in corporation taxes and there was a small decline in customs import duties. With total government revenues higher by 5 p.c. and expenditures higher by 8 p.c., the over-all deficit on government transactions (on the national accounts basis) widened to $800,000,000. In the final quarter of the year, it is estimated that the deficit for all governments combined was running at a seasonally adjusted annual rate in excess of $1,000,000,000.

Components of Gross National Product.—Labour income continued to rise in 1960, but at a significantly lower rate than in the preceding year. The gain of 4 p.c. contrasted with one of almost 8 p.c. in 1959. Associated with this advance in income in 1960 was a nearly 2.5-p.c. increase in the number of employed paid workers and higher average hourly earnings in many industries. Most of the major industries shared in the advance in labour income. Exceptions were construction, mining and transportation where income was either unchanged or slightly lower; in all these industries the level of employment declined significantly in 1960. The largest gain in labour income (13 p.c.) was recorded in forestry, but about two-thirds of this was attributable to the sharp temporary drop in income in 1959 during the industrial dispute in the woods industry in British Columbia. As in the recent past, gains in the service industries were relatively large; the increase in services other than government was 10 p.c. and in government service 7 p.c. In public utilities, communications, trade and financial services the advance in labour income ranged from about 3.5 p.c. to about 5.5 p.c. In general, these gains continued to be associated with increased employment in the respective industries.

Despite a small decline in employment in manufacturing and some reduction in hours of work of hourly rated employees, labour income in manufacturing in 1960 was up from 1959 by about 2 p.c., as average hourly earnings continued to rise. Most of the loss of employment was concentrated in the durable goods group where earnings on the average are substantially higher than in the non-durable goods group. Thus the distribution of manufacturing employment in 1960 compared with 1959 was one of the factors adversely affecting the rise in income.

Reflecting the partially offsetting influences present in the economy in 1960, corporate profits fell by about 6 p.c., following a considerable advance in the more expansionary climate of the previous year. A lower level of profits was a fairly common experience among industries, although there was a substantial increase in profits in mining, quarrying and oil wells and in financial services as well as a significant gain in public utilities. Most of the individual manufacturing industries shared in the unfavourable profits experience of the group as a whole, total manufacturing profits being down by about 11 p.c. Among the major manufacturing industries, the sharpest decline took place in iron and steel where profits were off about 24 p.c.; this decline was associated with reduced output in the industry. The deterioration in profits was also relatively large in such other durable goods industries as wood products, electrical apparatus and supplies and non-metallic mineral products. On the other hand, profits were moderately higher in paper products and in products of petroleum and coal where production was also higher in 1960 than in 1959.

Despite a significant increase in the volume of trade, profits were substantially lower in both wholesale and retail trade, apparently associated with higher costs and the easing in some prices. A small decline in profits in the transportation, communication and storage group was, in part, the result of the smaller volume of traffic handled by the railways.

Rent, interest and miscellaneous investment income rose by close to 4 p.c. in 1960. Net residential rents (paid and imputed) were estimated to have fallen; the rise in unit rents and the growth in the stock of dwellings were more than offset by higher operating expenses. Athough a larger deficit was recorded on operations of the Canadian National Railways together with a small deficit on the operations of Trans-Canada Air Lines (the first in many years), profits of government business enterprises rose by 7 p.c. in 1960.

Accrued net income of farm operators from farming operations in 1960 as estimated at $1,200,000,000, about 6.5 p.c. higher than in 1959. Cash income was slightly lower but the increase in the value of farm inventories at year-end raised gross income. Farm operating expenses and depreciation continued to rise but not enough to offset the advance in gross income. According to the preliminary estimate, the crop of grain in 1960 was about 11 p.c. larger than in the previous year; most of this increase was reflected in inventories rather than in sales. Livestock production showed a small decline in 1960. Increased cash income from the sale of cattle and calves partly offset the reduced income from the sale of hogs. Higher inventories at year-end reflected the further build-up of the cattle population, which more than compensated for reduced hog numbers.

Estimated at $2,100,000,000, income of non-farm unincorporated business was lower than in 1959 by 5 p.c. Income in construction and retail trade dropped sharply but there was some offsetting increase in income in the service industries.

National Savings and Investment.—Following a fairly substantial increase in 1959, gross national saving declined moderately in 1960. Estimated at $5,800,000,000, it was more than 2 p.c. lower than in the preceding year, and represented 16 p.c. of gross national product as compared with 17 p.c. in 1959. The drop in national saving reflects the larger government deficit referred to earlier; a moderate decline in personal saving offset a small increase in business saving.

The program of fixed investment in plant and equipment and housing was somewhat lower in 1960 and the rate of investment in inventories was largely unchanged. As in previous years, part of the total investment program was financed by resources from abroad, to the extent of $1,200,000,000, compared with $1,400,000,000 in 1959.

1.—Gross National Product, in Current and Constant (1949) Dollars, 1926-60

Year	Millions of Current Dollars	Millions of Constant (1949) Dollars
1926	5,152	7,576
1927	5,549	8,270
1928	6,046	9,037
1929	6,134	9,061
1930	5,728	8,679
1931	4,699	7,567
1932	3,827	6,798
1933	3,510	6,359
1934	3,984	7,127
1935	4,315	7,678
1936	4,653	8,022
1937	5,257	8,820
1938	5,278	8,871
1939	5,636	9,536
1940	6,743	10,911
1941	8,328	12,486
1942	10,327	14,816
1943	11,088	15,357
1944	11,850	15,927
1945	11,835	15,552
1946	11,850	15,251
1947	13,165	15,446
1948	15,120	15,735
1949	16,343	16,343
1950	18,006	17,471
1951	21,170	18,547
1952	23,995	20,027
1953	25,020	20,794
1954	24,871	20,186
1955	27,132	21,920
1956	30,585	23,811
1957	31,909	23,833
1958	32,867	24,102
1959	34,857	24,864
1960	35,959	25,379

2.—National Income and Gross National Product, by Component, 1956-60

Note.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1122; for 1954 in the 1959 edition, p. 1089; and for 1955 in the 1960 edition, p. 1116.

(Millions of dollars)

Item	1956	1957^r	1958^r	1959^r	1960
Wages, salaries and supplementary labour income	14,890	16,018	16,524	17,761	18,514
Military pay and allowances	424	476	491	496	509
Corporation profits before taxes[1]	2,908	2,581	2,518	2,907	2,735
Rent, interest and miscellaneous investment income	1,767	1,980	2,124	2,277	2,362
Accrued net income of farm operators from farm production[2]	1,450	1,026	1,197	1,132	1,207
Net income of non-farm unincorporated business[3]	1,965	2,008	2,125	2,218	2,105
Inventory valuation adjustment	−238	−78	−35	−115	−57
Net National Income at Factor Cost	**23,166**	**24,011**	**24,944**	**26,676**	**27,375**
Indirect taxes less subsidies	3,636	3,861	3,889	4,244	4,389
Capital consumption allowances and miscellaneous valuation adjustments	3,642	4,009	3,930	4,143	4,291
Residual error of estimate	141	28	104	−206	−96
Gross National Product at Market Prices	**30,585**	**31,909**	**32,867**	**34,857**	**35,959**

[1] Excludes dividends paid to non-residents. [2] Includes changes in farm inventories. [3] Includes net income of independent professional practitioners.

3.—Gross National Expenditure, 1956-60

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book p. 1124; for 1954 in the 1959 edition, p. 1089; and for 1955 in the 1960 edition, p. 1117.

(Millions of dollars)

Item	1956	1957^{r}	1958^{r}	1959^{r}	1960
Personal expenditure on consumer goods and services	18,833	20,072	21,240	22,482	23,409
Government expenditure on goods and services	5,386	5,722	6,173	6,416	6,716
Current expenditure	*4,126*	*4,340*	*4,784*	*4,893*	*5,128*
Gross fixed capital formation	*1,260*	*1,382*	*1,389*	*1,523*	*1,588*
Business gross fixed capital formation	6,774	7,335	6,975	6,894	6,612
New residential construction	*1,526*	*1,409*	*1,763*	*1,734*	*1,476*
New non-residential construction	*2,589*	*3,103*	*2,811*	*2,589*	*2,567*
New machinery and equipment	*2,659*	*2,823*	*2,401*	*2,571*	*2,569*
Value of physical change in inventories	1,084	231	−333	297	316
Non-farm business inventories	*808*	*305*	*−207*	*351*	*229*
Farm inventories and grain in commercial channels	*276*	*−74*	*−126*	*−54*	*87*
Exports of goods and services	6,365	6,391	6,340	6,676	6,957
Deduct: Imports of goods and services	−7,715	−7,813	−7,423	−8,115	−8,148
Residual error of estimate	−142	−29	−105	207	97
Gross National Expenditure at Market Prices	**30,585**	**31,909**	**32,867**	**34,857**	**35,959**

4.—Gross National Expenditure in Constant (1949) Dollars, 1956-60

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1124; for 1954 in the 1959 edition, p. 1090; and for 1955 in the 1960 edition, p. 1117.

(Millions of dollars)

Item	1956	1957^{r}	1958^{r}	1959^{r}	1960
Personal expenditure on consumer goods and services	15,603	16,058	16,568	17,281	17,774
Government expenditure on goods and services	3,794	3,817	3,983	4,005	4,043
Current expenditure	*2,869*	*2,850*	*3,027*	*2,985*	*3,002*
Gross fixed capital formation	*925*	*967*	*956*	*1,020*	*1,041*
Business gross fixed capital formation	4,891	5,084	4,734	4,567	4,286
New residential construction	*1,110*	*997*	*1,218*	*1,156*	*959*
New non-residential construction	*1,816*	*2,107*	*1,877*	*1,687*	*1,634*
New machinery and equipment	*1,965*	*1,980*	*1,639*	*1,724*	*1,693*
Change in inventories	955	147	−305	183	297
Non-farm business inventories	*648*	*257*	*−143*	*273*	*185*
Farm inventories and grain in commercial channels	*307*	*−110*	*−162*	*−90*	*112*
Exports of goods and services	5,340	5,353	5,447	5,563	5,712
Deduct: Imports of goods and services	−6,662	−6,604	−6,248	−6,883	−6,801
Residual error of estimate	−110	−22	−77	148	68
Gross National Expenditure in Constant (1949) Dollars	**23,811**	**23,833**	**24,102**	**24,864**	**25,379**
Index of gross national expenditure (1949=100)	145.7	145.8	147.5	152.1	155.3

5.—Personal Income, by Source, 1956-60

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1125; for 1954 in the 1959 edition, p. 1090; and for 1955 in the 1960 edition, p. 1118.

(Millions of dollars)

Item	1956	1957^r	1958^r	1959^r	1960
Wages, salaries and supplementary labour income	14,890	16,018	16,524	17,761	18,514
Deduct: Employer and employee contributions to social insurance and government pension funds	−532	−590	−615	−649	−739
Military pay and allowances	424	476	491	496	509
Net income received by farm operators from farm production	1,430	1,026	1,198	1,136	1,201
Net income of non-farm unincorporated business	1,965	2,008	2,125	2,218	2,105
Interest, dividends and net rental income of persons	1,908	2,141	2,288	2,559	2,696
Transfer Payments (excluding interest)—					
From governments	1,766	2,076	2,653	2,758	3,116
Charitable contributions from corporations	34	36	38	40	40
Totals, Personal Income	**21,885**	**23,191**	**24,702**	**26,319**	**27,442**

6.—Disposition of Personal Income, 1956-60

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1125; for 1954 in the 1959 edition, p. 1092; and for 1955 in the 1960 edition, p. 1118.

(Millions of dollars)

Item	1956	1957^r	1958^r	1959^r	1960
Personal Direct Taxes—					
Income taxes	1,496	1,693	1,554	1,744	1,977
Succession duties	146	126	126	130	158
Miscellaneous taxes	90	98	108	209	223
Purchases of goods and services	18,833	20,072	21,240	22,482	23,409
Personal net savings	1,320	1,202	1,674	1,754	1,675
Totals, Personal Income	**21,885**	**23,191**	**24,702**	**26,319**	**27,442**

7.—Personal Expenditure on Consumer Goods and Services, 1956-60

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1126; for 1954 in the 1959 edition, p. 1092; and for 1955 in the 1960 edition, p. 1118.

(Millions of dollars)

Item	1956	1957^r	1958^r	1959^r	1960
Foods	4,571	4,951	5,236	5,470	5,632
Tobacco and alcoholic beverages	1,278	1,370	1,447	1,548	1,615
Clothing and personal furnishings	2,037	2,098	2,179	2,262	2,320
Shelter	2,621	2,906	3,166	3,451	3,634
Household operation	2,509	2,593	2,702	2,880	2,900
Transportation	2,211	2,346	2,512	2,714	2,768
Personal and medical care and death expenses	1,316	1,437	1,611	1,757	1,880
Miscellaneous	2,290	2,371	2,387	2,400	2,660
Totals	**18,833**	**20,072**	**21,240**	**22,482**	**23,409**
Durable goods	2,431	2,430	2,499	2,680	2,687
Non-durable goods	9,736	10,402	10,878	11,315	11,783
Services	6,666	7,240	7,863	8,487	8,939

8.—Federal, Provincial and Municipal Government Revenue and Expenditure, 1956-60

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1126; for 1954 in the 1959 edition, pp. 1092 and 1094; and for 1955 in the 1960 edition, p. 1119.

(Millions of dollars)

Item	1956	1957[r]	1958[r]	1959[r]	1960
Revenue					
Direct Taxes: Persons—					
Income taxes	1,496	1,693	1,554	1,744	1,977
Succession duties	146	126	126	130	158
Miscellaneous taxes	90	98	108	209	223
Direct taxes: corporations	1,413	1,337	1,300	1,541	1,449
Withholding taxes	69	83	48	72	77
Indirect taxes	3,759	3,977	4,028	4,442	4,623
Investment Income—					
Interest	258	293	363	412	438
Profits of government business enterprises	576	556	574	581	622
Employer and employee contributions to social insurance and government pension funds	532	590	615	649	739
Totals, Revenue	**8,339**	**8,753**	**8,716**	**9,780**	**10,306**
Expenditure					
Purchase of goods and services	5,386	5,722	6,173	6,416	6,716
Transfer Payments—					
Interest	714	739	781	944	1,049
Other	1,766	2,076	2,653	2,758	3,116
Subsidies	123	116	139	198	234
Surplus or deficit (on transactions relating to the National Accounts)	350	100	−1,030	−536	−809
Totals, Expenditure	**8,339**	**8,753**	**8,716**	**9,780**	**10,306**

9.—Analysis of Corporation Profits, 1956-60

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1127; for 1954 in the 1959 edition, p. 1094; and for 1955 in the 1960 edition, p. 1119.

(Millions of dollars)

Item	1956	1957[r]	1958[r]	1959[r]	1960
Corporation profits before taxes	2,908	2,581	2,518	2,907	2,735
Dividends paid to non-residents	437	475	470	494	465
Corporation profits including dividends paid to non-residents	3,345	3,056	2,988	3,401	3,200
Deduct: Corporation income tax liabilities	−1,413	−1,337	−1,300	−1,541	−1,449
Excess of tax liabilities over collections	*40*	*−213*	*−36*	*101*	*−223*
Tax collections	*1,373*	*1,550*	*1,336*	*1,440*	*1,672*
Corporation profits after taxes	1,932	1,719	1,688	1,860	1,751
Deduct: Dividends paid to non-residents	−437	−475	−470	−494	−465
Corporation profits retained in Canada	1,495	1,244	1,218	1,366	1,286
Deduct: Dividends paid to Canadian persons	−330	−354	−368	−403	−422
Deduct: Charitable contributions from corporations	−34	−36	−38	−40	−40
Undistributed Corporation Profits	**1,131**	**854**	**812**	**923**	**824**

10.—Corporation Profits before Taxes (including Dividends Paid to Non-residents), by Industry, 1958-60

NOTE.—Comparable figures for the years 1954 and 1955 are given in the 1957-58 Year Book, p. 1127; for 1956 in the 1959 edition, p. 1094; and for 1957 in the 1960 edition, p. 1120.

(Millions of dollars)

Industry	1958^{r}	1959^{r}	1960
Agriculture Forestry Fishing and trapping	9	8	9
Mining, quarrying and oil wells	234	313	352
Manufacturing	1,362	1,596	1,420
Construction	194	190	172
Transportation	90	121	115
Storage	9	17	12
Communications	80	72	77
Electric power, gas and water utilities	56	67	75
Wholesale trade	231	264	217
Retail trade	226	240	200
Finance, insurance and real estate	425	437	487
Service	72	76	64
Totals	**2,988**	**3,401**	**3,200**

Section 2.—Survey of Production*

Scope of the Series.—The scope of the survey of production is limited to industries chiefly engaged in the production of commodities. The activities of such industries as transportation, communication, trade, finance and service are excluded except as certain of their costs are indirectly reflected in the value of output of the commodity-producing industries. This is in contrast to the scope of the gross national product series in the national accounts (see p. 1083) which encompasses all industries.

The term "production" is used in its popularly accepted sense as applied to such processes as the growing of crops, the mining of minerals, the catching of fish, the conversion of water power to electric energy, the construction of buildings and the manufacturing and processing of goods. Primary production includes agriculture, forestry, fisheries, trapping, mining and electric power; construction and manufacturing are classified as secondary production.

In combining value of production figures for a number of industries, it is essential, in order to assess accurately the contribution of each industry to the total, that inter-industry duplication be eliminated. Thus only the "net" value of production, or "value added" is considered in this series.

Relation to National Income Accounting.—As already mentioned, "net" production or "value added" is generally considered the most significant measure of production. Value added is computed by deducting from the total value of output (excluding indirect taxes) for each industry, the cost of materials, fuel, purchased electricity and process supplies consumed in the production process. This measurement is similar to but not strictly comparable with the concept involved in the contribution of each industry to the gross national product at factor cost. There are conceptual differences as well as problems of classification.

The value of gross national product at factor cost can be measured either directly by summing the factor incomes and capital consumption allowances paid or charged by each industry, or indirectly by subtracting all intermediate goods and services from the revenue (excluding indirect taxes) arising from the production of goods and services in each industry. The latter approach is followed in the compilation of the value added statistics of the survey of production series. These value added residuals for each commodity-producing industry, however, are not exactly equivalent to gross national product originating in these industries since they still contain certain miscellaneous indirect taxes such as licences and property taxes as well as the cost of such services as insurance, advertising, communications, etc., which originate in the non-commodity-producing industries. For instance, while the cost of insurance incurred by manufacturers is included in the net value of the manufacturing industry as given in this Section, it is not included in the contribution of manufacturing to total gross national product at factor cost.

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* Prepared in the Industrial Output Section, National Accounts Division, Dominion Bureau of Statistics.

The data necessary to make the deduction of these business service costs from value added to arrive at a true figure of gross national product for each industry and province are not collected. However, available data* indicate that these costs constitute a smaller share of value added for such industries as agriculture and mining than for manufacturing and construction. The contribution to total gross national product of the primary industries and of those provinces whose economies are largely dominated by the primary industries is thus proportionately greater than the data contained in this Section indicate. Thus the measurement of the value of output based on "value added" contains some duplication if it is used as an approximation of gross national product originating.

One of the major problems of classification is that the data for three sectors of the gross national product by-industry estimates (net income of unincorporated business, investment income, and capital consumption allowances and miscellaneous valuation adjustments) are on an enterprise basis while data for the other sectors (wages, salaries and supplementary labour income and the inventory valuation adjustment) are on an establishment basis. By contrast, most of the value added data for the commodity-producing industries are on an establishment basis, each unit of an enterprise being treated as a separate entity and classified to the industry in which it operates. A company may own several establishments which are classified to different industrial divisions. The nature of the available data makes it extremely difficult, in compiling industrial distributions of the gross national product, to get an accurate breakdown of enterprise-type statistics on a plant-to-plant basis for such companies; for this reason, the adjustment to an establishment basis was not made to the industrial distribution of the gross national product series. Nor is a geographical allocation of data available for that series, although the personal income component is capable of provincial distribution. Thus, a major advantage of the net value of commodity production series is that it can be broken down by province. Also, in compiling the gross national product series it is difficult to allocate corporation profits according to the provinces in which they are generated by productive activity, but it should be borne in mind that the commodity production estimates by province exclude the non-commodity-producing industries.

Statistics of Commodity Production.—The postwar period 1947 to 1959 has been a period of tremendous growth in commodity production in Canada. The total net value of output all but doubled between 1947 and 1955 and increased another 18.8 p.c. by 1959. Among the primary industries, mining showed the greatest absolute increase, advancing from $402,538,000 to $1,497,104,000, or by 271.9 p.c. Electric power followed, rising 222.1 p.c. in the same comparison and reflecting a substantial increase in installed generating capacity during the period. However, the great activity experienced by the construction industry all across the country during these years resulted in that industry showing the largest proportionate gain of all the major commodity-producing industries in the 1947-59 comparison; its net value of output rose by 285.2 p.c. from $963,100,000 to $3,710,129,000, although the 1959 figure was slightly lower than those for 1957 and 1958. Manufactures advanced steadily throughout the period, except for a slight decrease in 1958, reaching a total of $10,320,963,000 in 1959, a figure 140.5 p.c. above that of 1947.

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* Industry "value added" totals were compared, after adjustment for classification differences, with corresponding gross national product totals for 1949 contained in DBS supplement to Reference Paper No. 72 *Supplement to the Inter-Industry Flow of Goods and Services, Canada, 1949*. Industry values in that report are all on an establishment basis.

The shift in relative importance of primary and secondary production during the 1947-59 period is noteworthy. In the earlier year primary production represented 34 p.c. of the total net value of Canadian production and secondary output 66 p.c.; by 1959 the proportions were 25 p.c. and 75 p.c., respectively. Internally, agriculture's share of the total net value dropped from 20 p.c. to 10 p.c. over the twelve-year period and the relative importance of construction increased from 12 p.c. to 20 p.c. The contribution of manufacturing to total net value of production remained fairly steady at from 53 to 55 p.c.

Tables **11** and **12** show the long-term growth of net output of the commodity-producing industries, by industry and by province. Figures for the two latest years available are given by both industry and province in Table **13**.

11.—Net Value of Production and Percentage Analysis, by Industry, 1947, 1950, 1953 and 1957-59

NOTE.—Net production represents total value under a particular heading, less the cost of materials, fuel, purchased electricity and supplies consumed in the production process. Data for fisheries and trapping represent total value. This series has been revised with respect to certain purchased agricultural services since publication in the 1960 Year Book.

Industry	1947		1950		1953		1957		1958		1959	
	Net Value	P.C. of Total	Net Value	P.C. of Total	Net Value	P.C. of Total	Net Value	P.C. of Total	Net Value	P.C. of Total	Net Value	P.C. of Total
	$'000		$'000		$'000		$'000		$'000		$'000	
Primary Industries[1]	**2,755,988**	**34.4**	**3,442,121**	**31.5**	**4,165,603**	**28.3**	**4,384,256**	**24.5**	**4,561,558**	**25.2**	**4,796,667**	**25.5**
Agriculture[1]	1,607,815	20.1	1,886,930	17.2	2,264,297	15.4	1,675,600	9.4	1,925,021	10.6	1,838,891	9.8
Forestry[2]	439,029	5.5	487,120	4.5	558,335	3.8	663,242	3.7	515,257	2.8	597,398	3.2
Fisheries	57,517	0.7	82,191	0.8	89,833	0.6	94,247	0.5	116,530	0.6	105,534	0.6
Trapping	16,843	0.2	15,204	0.1	13,221	0.1	10,951	0.1	10,549	0.1	9,707	0.0
Mining	402,539	5.0	657,329	6.0	790,597	5.4	1,308,518	7.3	1,311,217	7.3	1,497,104	7.9
Electric power[3]	232,245	2.9	313,347	2.9	449,321	3.0	631,698	3.5	682,985	3.8	748,033	4.0
Secondary Industries	**5,255,156**	**65.6**	**7,486,758**	**68.5**	**10,547,069**	**71.7**	**13,535,457**	**75.5**	**13,512,160**	**74.8**	**14,031,092**	**74.5**
Manufactures	4,292,056	53.6	5,942,058	54.4	7,993,069	54.3	9,822,085	54.8	9,792,506	54.2	10,320,963	54.8
Construction	963,100	12.0	1,544,700	14.1	2,554,000	17.4	3,713,372	20.7	3,719,654	20.6	3,710,129	19.7
Totals	**8,011,144**	**100.0**	**10,928,879**	**100.0**	**14,712,673**	**100.0**	**17,919,713**	**100.0**	**18,073,718**	**100.0**	**18,827,759**	**100.0**

[1] Excludes agriculture in Newfoundland. [2] Excludes farm woodlots. [3] Method of compilation changed in 1956.

12.—Net Value of Production and Percentage Analysis, by Province, 1947, 1950, 1953 and 1957-59

NOTE.—This series has been revised with respect to certain purchased agricultural services since publication in the 1960 Year Book.

Province or Territory	1947		1950		1953	
	Net Value	P.C. of Total	Net Value	P.C. of Total	Net Value	P.C. of Total
	$'000		$'000		$'000	
Newfoundland[1]	—	—	104,211	1.0	159,195	1.1
Prince Edward Island	22,184	0.3	30,741	0.3	33,649	0.2
Nova Scotia	210,127	2.6	262,535	2.4	332,290	2.2
New Brunswick	195,887	2.4	244.296	2.2	263,204	1.8
Quebec	2,095,223	26.2	2,848,834	26.1	3,819,477	26.0
Ontario	3,174,214	39.6	4,484,290	41.0	6,015,710	40.9
Manitoba	396,149	4.9	494,943	4.5	569,886	3.9
Saskatchewan	519,785	6.5	645,776	5.9	926,272	6.3
Alberta	573,419	7.2	765,353	7.0	1,191,919	8.1
British Columbia[2]	817,102	10.2	1,030,405	9.4	1,379,480	9.4
Yukon and Northwest Territories[2]	7,054	0.1	17,495	0.2	21,589	0.1
Canada	**8,011,144**	**100.0**	**10,928,879**	**100.0**	**14,712,673**	**100.0**
	1957		1958		1959	
	Net Value	P.C. of Total	Net Value	P.C. of Total	Net Value	P.C. of Total
	$'000		$'000		$'000	
Newfoundland[1]	192,912	1.1	190,229	1.0	210,402	1.1
Prince Edward Island	36,585	0.2	41,620	0.2	49,455	0.3
Nova Scotia	398,970	2.2	394,972	2.2	408,802	2.2
New Brunswick	299,001	1.7	305,414	1.7	315,589	1.7
Quebec	4,644,777	25.9	4,672,748	25.8	4,816,817	25.6
Ontario	7,566,859	42.2	7,640,747	42.3	7,990,508	42.4
Manitoba	645,323	3.6	727,605	4.0	746,252	4.0
Saskatchewan	780,800	4.4	859,299	4.8	875,511	4.6
Alberta	1,451,644	8.1	1,494,941	8.3	1,551,745	8.2
British Columbia[2]	1,872,465	10.4	1,714,687	9.5	1,829,268	9.7
Yukon and Northwest Territories[2]	30,378	0.2	31,456	0.2	33,412	0.2
Canada	**17,919,713**	**100.0**	**18,073,718**	**100.0**	**18,827,759**	**100.0**

[1] Excludes agriculture in all years, and fisheries and trapping in 1950.

[2] Construction figures for Yukon and Northwest Territories are included with British Columbia.

13.—Net Value of Production and Percentage Analysis, by Province, 1958 and 1959

Industry	Newfoundland		Prince Edward Island		Nova Scotia		New Brunswick	
1958	$'000	p.c.	$'000	p.c.	$'000	p.c.	$'000	p.c.
Agriculture	..	..	18,005	43.3	26,396	6.7	31,323	10.2
Forestry	20,586	10.8	2	0.0	12,656	3.2	31,039	10.2
Fisheries	11,312	5.9	3,754	9.0	24,955	6.3	7,499	2.5
Trapping	135	0.1	1	0.0	112	0.0	125	0.0
Mining	36,855	19.4	—	—	46,816	11.9	9,168	3.0
Electric power	9,120	4.8	1,757	4.2	20,204	5.1	17,179	5.6
Manufactures	58,045	30.5	7,266	17.5	176,998	44.8	130,668	42.8
Construction	54,178	28.5	10,834	26.0	86,836	22.0	78,412	25.7
Totals, 1958	**190,229**[1]	**100.0**	**41,620**	**100.0**	**394,972**	**100.0**	**305,414**	**100.0**

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[1] Excludes agriculture.

13.—Net Value of Production and Percentage Analysis, by Province, 1958 and 1959—concluded

Industry	Quebec		Ontario		Manitoba		Saskatchewan	
1958—concluded	$'000	p.c.	$'000	p.c.	$'000	p.c.	$'000	p.c.
Agriculture	286,180	6.1	572,551	7.5	192,829	26.5	352,510	41.0
Forestry	147,158	3.2	87,633	1.1	5,387	0.7	3,928	0.5
Fisheries	4,195	0.1	7,271	0.1	3,540	0.5	1,091	0.1
Trapping	1,171	0.0	2,713	0.0	1,803	0.2	2,139	0.3
Mining	220,238	4.7	401,231	5.3	28,896	4.0	158,991	18.5
Electric power	200,534	4.3	260,647	3.4	29,235	4.0	26,094	3.0
Manufactures	2,970,775	63.6	4,914,074	64.3	284,368	39.1	123,394	14.4
Construction	842,498	18.0	1,394,626	18.3	181,547	25.0	191,151	22.2
Totals, 1958	**4,672,748**	**100.0**	**7,640,747**	**100.0**	**727,605**	**100.0**	**859,299**	**100.0**

Industry	Alberta		British Columbia		Yukon and Northwest Territories		Canada	
	$'000	p.c.	$'000	p.c.	$'000	p.c.	$'000	p.c.
Agriculture	358,362	24.0	86,865	5.1	..	..	1,925,021	10.6
Forestry	13,174	0.9	192,743	11.2	952	3.0	515,257	2.8
Fisheries	879	0.0	51,353	3.0	682	2.2	116,530	0.6
Trapping	1,103	0.1	393	0.0	854	2.7	10,549	0.1
Mining	309,218	20.7	73,640	4.3	26,163	83.2	1,311,217	7.3
Electric power	40,588	2.7	75,681	4.4	1,946	6.2	682,985	3.8
Manufactures	339,439	22.7	786,620	45.9	859	2.7	9,792,506	54.2
Construction	432,179	28.9	447,393	26.1	[2]	—	3,719,654	20.6
Totals, 1958	**1,494,941**	**100.0**	**1,714,687**	**100.0**	**31,456**	**100.0**	**18,073,718**	**100.0**

Industry	Newfoundland		Prince Edward Island		Nova Scotia		New Brunswick	
1959	$'000	p.c.	$'000	p.c.	$'000	p.c.	$'000	p.c.
Agriculture	..	..	17,621	35.6	25,846	6.3	29,082	9.2
Forestry	20,659	9.8	—	—	12,306	3.0	23,763	7.5
Fisheries	14,529	6.9	4,287	8.7	27,112	6.6	8,763	2.8
Trapping	52	0.0	1	0.0	131	0.1	134	0.1
Mining	46,185	22.0	4,516	9.1	48,192	11.8	11,622	3.7
Electric power	9,521	4.5	1,931	3.9	20,824	5.1	19,307	6.1
Manufactures	57,755	27.5	7,391	15.0	161,452	39.5	133,935	42.4
Construction	61,702	29.3	13,708	27.7	112,940	27.6	88,983	28.2
Totals, 1959	**210,402**[1]	**100.0**	**49,455**	**100.0**	**408,802**	**100.0**	**315,589**	**100.0**

Industry	Quebec		Ontario		Manitoba		Saskatchewan	
	$'000	p.c.	$'000	p.c.	$'000	p.c.	$'000	p.c.
Agriculture	277,025	5.7	512,255	6.4	173,622	23.3	364,804	41.7
Forestry	172,852	3.6	109,421	1.4	5,298	0.7	4,103	0.5
Fisheries	4,316	0.1	4,866	0.1	3,757	0.5	1,190	0.1
Trapping	1,339	0.0	2,445	0.0	1,496	0.2	1,616	0.2
Mining	269,392	5.6	484,407	6.1	25,667	3.4	160,707	18.3
Electric power	215,735	4.5	283,470	3.5	32,248	4.3	30,516	3.5
Manufactures	2,998,776	62.3	5,332,082	66.7	308,341	41.3	125,877	14.4
Construction	877,382	18.2	1,261,562	15.8	195,823	26,3	186,697	21.3
Totals, 1959	**4,816,817**	**100.0**	**7,990,508**	**100.0**	**746,252**	**100.0**	**875,511**	**100.0**

Industry	Alberta		British Columbia		Yukon and Northwest Territories		Canada	
	$'000	p.c.	$'000	p.c.	$'000	p.c.	$'000	p.c.
Agriculture	353,066	22.7	85,570	4.7	..	..	1,838,891	9.8
Forestry	16,671	1.1	231,830	12.7	497	1.5	597,398	3.2
Fisheries	1,016	0.1	34,995	1.9	703	2.1	105,534	0.6
Trapping	1,197	0.1	422	0.0	876	2.6	9,707	0.0
Mining	336,649	21.7	81,787	4.5	27,980	83.8	1,497,104	7.9
Electric power	45,761	2.9	86,013	4.7	2,707	8.1	748,033	4.0
Manufactures	346,300	22.3	848,404	46.4	650	1.9	10,320,963	54.8
Construction	451,086	29.1	460,246	25.1	[2]	—	3,710,129	19.7
Totals, 1959	**1,551,745**	**100.0**	**1,829,268**	**100.0**	**33,412**	**100.0**	**18,827,759**	**100.0**

[1] Excludes agriculture.

[2] Included with British Columbia.

Section 3.—Canada's International Investment Position*

Canada is by far the world's largest importer of private long-term capital, and the tremendous capital formation which has been a feature of most of the period since the 1940's has been associated with an unprecedented growth in the country's external liabilities. These investments have contributed to a rapid rate of growth in the Canadian economy, particularly in the exploitation of natural resources, and have added significantly to Canadian production, employment and income. At the same time they have added substantially to the burden of Canada's external debt and to the proportion of Canadian industry controlled by non-residents.

Canada's gross external liabilities amounted to $26,400,000,000 at the end of 1960; non-resident-owned long-term investments in Canada had reached a book value of $22,300,000,000, having tripled since the end of World War II. The part of these investments in establishments controlled outside Canada totalled $12,900,000,000. These foreign direct investments have been growing more rapidly than the total. Advances in other Canadian equities, although smaller, have also been substantial and there have been sharp increases in recent years in foreign holdings of Canadian bonds and debentures.

Investments of non-resident capital have been closely related to the high rate of growth in Canada and to the heavy demands placed on capital markets by this factor and by the financial needs of governments and municipalities. Large development projects have been initiated and financed by investors from other countries and the growth effects from this investment have, in turn, led to Canadian borrowing in capital markets outside of Canada. While capital inflows have been the principal source of the increased indebtedness abroad, another substantial contributor has been the earnings from non-resident-controlled branches and subsidiaries which were retained in Canada. New resource industries depending to a large extent on non-resident financing include all branches of the petroleum industry, iron ore and other mining, aluminum, nickel, pulp and paper, and chemical industries. In addition, secondary industry has also benefited from non-resident investment.

Canada's gross external assets totalled $9,400,000,000 at the end of 1960 and government-owned assets made up a substantial part of that total. Canada's net balance of international indebtedness at the same date was estimated at $17,000,000,000, well over half of which was incurred in the five years since 1955 and more than two-thirds in the eight years since 1952.

Foreign Investments in Canada.—Dependence upon external sources of capital for financing in earlier periods of heavy investment activity has been characteristic of Canadian development. During the exceptional growth period that occurred before World War I the rate of increase in non-resident investment was very high and dependency upon external sources of capital was greater than in later periods. Total non-resident investments in Canada increased from an estimated $1,232,000,000 in 1900 to $3,837,000,000 by 1914, mainly in the form of bonded debt for railway and other expansion guaranteed by the Canadian Government. This was the period when the principal external source of capital was London, and by 1914 British investments in Canada, estimated at $2,778,000,000, were at about their highest level. By the same date, United States investments, although they had been increasing rapidly, had only about one-third of the value of British-owned investments.

During the first part of the inter-war period the United States became the principal source of external capital, and by 1926 the United States-owned portion of Canada's international debt exceeded that owned in the United Kingdom which had not increased since 1914. Growth in United States investments in Canada continued for some years but was interrupted in the 1930's when the total was reduced by repatriations of securities and other withdrawals of capital. Increases began again in the 1940's and by the end of World War II, United States investments of $4,990,000,000 compared with British investments of $1,750,000,000. The latter had been reduced by wartime repatriation measures and the proceeds were used in financing British expenditures in Canada. Following the War, up to 1948, some further declines occurred in British investments in Canada but since then they have increased.

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* Prepared in the Balance of Payments Section, International Trade Division, Dominion Bureau of Statistics. A more extended review appears in DBS report *Canada's International Investment Position, 1926 to 1954* (Catalogue No. 67-503) and more recent statistics in the annual report *The Canadian Balance of International Payments and International Investment Position* (Catalogue No. 67-201).

United States investments have risen each year since the end of World War II, particularly since 1947 when the period of intense activity in the petroleum industry got under way following new discoveries. More than half the growth in United States investment in Canada has occurred since 1952. At $17,000,000,000, United States investments in 1960 continued to represent more than three-quarters of all non-resident investments in Canada and also made up a similar ratio of the increase since 1952. The main rise occurred in direct investments in companies controlled in the United States, which are prominent in many branches of Canadian industry. By 1960 these had increased to well over three times their value in 1952. In the same period portfolio investments in Canada owned in the United States rose by more than two-thirds. A considerable part of this latter rise occurred in the period 1956-59 when large sales of new issues of securities were made in that country.

British investments in Canada totalled $3,350,000,000 at the end of 1960. Although these investments then exceeded by some hundreds of millions of dollars the levels reached at the end of World War I and again in the early 1930's, they accounted for only about 15 p.c. of the total non-resident investments in Canada compared with 36 p.c. at the end of 1939 before most of the wartime repatriations. British investments in Canada had more than doubled from the low point in 1948; the increase had been particularly concentrated in direct investments which had more than tripled and which, at the end of 1960, represented a much larger portion of the total than in the prewar period. In absolute terms, this rise in total British investments in Canada is more than the rise in investments by all other overseas countries in the same period, although the rate of increase has been lower.

Investments of countries other than the United States and the United Kingdom reached a record total of nearly $2,000,000,000 at the end of 1960. Approaching four times the corresponding 1952 figure, this represented a much higher rate of increase than had occurred in either United States or British investments and large increases had taken place in portfolio holdings of securities as well as in direct investments. At 9 p.c. of the total, this group of countries, mostly in Western Europe, made up a larger portion of total investments than ever before. Nearly 90 p.c. of the direct investments, which totalled $610,000,000 in 1959, also came from Western Europe; more than one-quarter was of Belgian origin with French, Swiss and German investments making up the next largest groups.

The degree of dependence upon non-resident capital for financing Canadian investment has been relatively much less in the postwar period than in the earlier periods of exceptional expansion, even though the rise in non-resident investments has been so great. Thus, from 1950 to 1955 the net use of foreign resources amounted to about one-fifth of net capital formation in Canada, and direct foreign financing amounted to about one-third. But from 1956 to 1959 when these ratios had increased considerably to more than one-third and two-fifths, respectively, they were still less than the corresponding ratios in the period 1929 to 1930 when inter-war investment activity was at its highest point. In that shorter period more than one-half of net capital formation was financed from outside of Canada, and in the period of heavy investment before World War I an even larger ratio of investment was financed by external capital. In considering these changes it should be noted that for a decade and a half, between 1934 and 1949, Canada was a net exporter of capital and that Canadian assets abroad have been rising over a long period.

It should also be noted that the above ratios relate to the place of non-resident investments in all spheres of development including those where Canadian sources of financing predominate such as in merchandising, agriculture, housing, public utilities, and other forms of social capital. Thus non-resident financing of manufacturing, petroleum and mining has been much higher than the over-all ratios indicate, and has provided the major portion of the capital investment in this field in the period since 1948. The most recent comprehensive calculation of the ratios of non-resident ownership in Canadian manufacturing, mining and petroleum is for the year 1958 and it should be noted that subsequent changes may have increased non-resident ownership even more. In that year the Canadian manufacturing industry was 51 p.c. owned by non-residents but capital subject to foreign control was 57 p.c. These proportions compared with 47 p.c. and 51 p.c., respectively, as recently as the end of 1954. In the field of petroleum and natural gas, non-resident ownership and control each amounted to 64 p.c. and 75 p.c., respectively, at the end of 1958 whereas at the end of 1954 non-resident ownership and control had amounted to 60 p.c. and 69 p.c., respectively; in mining and smelting, non-resident ownership and control amounted to 56 p.c. and 60 p.c., respectively, compared with 53 p.c. and 51 p.c. in 1954. However, resident-owned Canadian capital continued to play a leading role in the financing of such areas of business as merchandising, railways and other public utilities. Hence non-resident ownership of business as a whole, including manufacturing, petroleum, mining, merchandising and railways and utilities, rose only slightly from 32 p.c. in 1948 to 34 p.c. in 1958 (the last year for which the calculation has been made). But, in the same years, companies subject to non-resident control increased from 25 p.c. to 32 p.c. their share of the total even in this broad area of business, a trend also evident in many subdivisions of the manufacturing and extractive industries.

The petroleum and natural gas industry, including exploration and development, refining, merchandising, pipelines and other distribution facilities, has been the largest single recipient of capital inflows in the postwar period, accounting directly for far more than one-half of the inflow of United States capital for direct investment in Canada. By the end of 1958, investments in Canadian petroleum concerns controlled in the United States made up 69 p.c. of the total. Another 6 p.c. of the investment was controlled in overseas countries. Investments owned in the United States and overseas were 57 p.c. and 7 p.c., respectively, of the total.

Another basis of judging the place of foreign-controlled business in Canadian industry is provided by a special study of production and employment in the larger Canadian manufacturing establishments controlled in the United States. Such establishments having an investment of $1,000,000 or more accounted for about 30 p.c. of Canadian manufacturing production in 1953 and 21 p.c. of employment in that field. These ratios in non-resident-controlled plants were considerably higher than in 1946—the previous year for which a study of this kind was made.

In some industries the proportions of production and employment in plants controlled in the United States were much higher than this. Automobiles, for example, are mainly produced in United States-controlled plants, but this is exceptional. Among other industries where well over one-half of the production is in United States-controlled firms are the smelting and refining of non-ferrous metals, petroleum refining, rubber products, and motor-vehicle parts. In several major industries like electrical apparatus and supplies and non-ferrous metal products the distribution of control between Canadian and United States-controlled companies is more evenly divided. In other industries the non-resident share is large although less than one-half the total. These include pulp and paper, other paper products, chemicals, medicinal and pharmaceutical products, sheet-metal products, and certain branches of the machinery industry.

There are, however, many industries where the largest part of production has been in Canadian-controlled plants. Prominent among these are such important branches of industry as primary iron and steel, and some other subdivisions of the iron and steel industry, textiles, clothing, and divisions of the foods and beverages industry, such as bakery products, beverages and dairy products. But even in some of these industries changes in ownership and control have been occurring in recent years.

14.—Estimate of the Canadian Balance of International Indebtedness, as at Dec. 31, 1939-60

NOTE.—Totals are rounded and may not represent the sum of their components.

(Billions of dollars)

Item	1939	1945	1949	1955	1957	1958	1959	1960p
Canadian Liabilities—								
Direct investments	2.3	2.7	3.6	7.7	10.1	10.9	11.9	12.9
Government and municipal bonds	1.7	1.7	1.8	1.9	2.3	2.6	3.1	3.3
Other portfolio investments	2.6	2.4	2.3	3.2	4.1	4.4	4.5	4.8
Miscellaneous investments	0.3	0.3	0.3	0.5	0.9	1.1	1.3	1.3
Totals, Non-resident Long-Term Investment in Canada	6.9	7.1	8.0	13.5	17.5	19.0	20.8	22.3
Equity of non-residents in Canadian assets abroad	0.2	0.2	0.3	0.7	0.8	0.9	1.0	1.1
Canadian dollar holdings of non-residents	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.6
Canadian short-term assets of international financial agencies	—	—	0.3	0.2	0.2	0.2	0.4	0.4
Gross Liabilities[1]	**7.4**	**7.6**	**8.9**	**14.8**	**18.9**	**20.6**	**22.7**	**24.4**
United States[1]	4.5	5.4	6.4	11.1	14.2	15.5	16.9	18.3
United Kingdom[1]	2.6	1.8	1.8	2.5	3.1	3.3	3.4	3.5
Other countries[1, 2]	0.3	0.4	0.7	1.2	1.7	1.9	2.4	2.7
Short-term commercial payables[3]	..	0.4	0.4	0.5	1.0	1.2	1.6	1.9
Gross Liabilities	..	**8.0**	**9.3**	**15.3**	**19.9**	**21.8**	**24.3**	**26.4**
Canadian Assets—								
Direct investments	0.7	0.7	0.9	1.7	2.1	2.2	2.3	2.6
Portfolio investments	0.7	0.6	0.6	1.0	1.1	1.1	1.1	1.2
Government of Canada loans and advances	—	0.7	2.0	1.6	1.5	1.5	1.5	1.4
Government of Canada subscriptions to international financial agencies	—	—	0.4	0.4	0.4	0.4	0.6	0.6
Totals, Canadian Long-Term Investments Abroad	1.4	2.0	4.0	4.7	5.0	5.1	5.5	5.8
Government of Canada holdings of gold and foreign exchange	0.5	1.7	1.2	1.9	1.8	1.9	1.8	1.8
Bank balances and other short-term funds abroad	—	0.1	0.1	0.3	0.9	1.0	1.0	1.3
Gross Assets[1]	**1.9**	**3.8**	**5.2**	**7.0**	**7.7**	**7.9**	**8.3**	**9.0**
Government of Canada holdings of gold and foreign exchange	0.5	1.7	1.2	1.9	1.8	1.9	1.8	1.8
United States[1, 4]	0.9	0.9	1.1	2.2	3.0	3.1	3.3	3.8
United Kingdom[1, 4]	0.1	0.7	1.6	1.4	1.4	1.4	1.4	1.5
Other countries[1, 2]	0.4	0.5	1.3	1.4	1.5	1.6	1.9	1.9
Short-term commercial receivables[3]	..	0.1	0.2	0.3	0.4	0.5	0.5	0.4
Gross Assets	..	**4.0**	**5.5**	**7.4**	**8.1**	**8.4**	**8.8**	**9.4**
Canadian Net International Indebtedness—Net Liabilities	**5.5**[1]	**4.0**	**3.8**	**7.9**	**11.8**	**13.4**	**15.5**	**17.0**
Government of Canada holdings of gold and foreign exchange	−0.5	−1.7	−1.2	−1.9	−1.8	−1.9	−1.8	−1.8
United States[1, 4]	3.6	4.6	5.3	8.8	11.2	12.4	13.7	14.5
United Kingdom[1, 4]	2.5	1.1	0.2	1.1	1.7	1.9	2.0	2.1
Other countries[1, 2]	−0.1	−0.1	−0.6	−0.2	0.1	0.3	0.6	0.7
Short-term commercial indebtedness[3]	..	0.3	0.2	0.2	0.6	0.7	1.0	1.5

[1] Excludes short-term commercial indebtedness.

[2] Includes international financial agencies.

[3] Country distribution not available.

[4] Excludes Government of Canada holdings of gold and foreign exchange.

15.—Foreign Capital Invested in Canada, by Type of Investment, as at Dec. 31, 1930-59

(Millions of dollars)

Type of Investment	1930	1945	1951	1955[r]	1956[r]	1957[r]	1958[r]	1959
Government Securities—								
Federal	682	726	1,013	529	502	501	564	612
Provincial	592	624	771	888	1,081	1,165	1,276	1,585
Municipal	432	312	319	452	552	660	781	915
Totals, Government Securities	1,706	1,662	2,103	1,869	2,135	2,326	2,621	3,112
Public Utilities—								
Railways	2,244	1,599	1,436	1,364	1,426	1,396	1,413	1,405
Other (excluding pipelines and public enterprises)	634	493	524	574	628	661	712	739
Totals, Public Utilities	2,878	2,092	1,960	1,938	2,054	2,057	2,125	2,144
Manufacturing (excluding petroleum refining)	1,459	1,723	2,715	4,025	4,579	5,051	5,381	5,726
Petroleum and natural gas	150	157	693	1,854	2,275	2,849	3,187	3,455
Other mining and smelting	311	359	586	1,121	1,330	1,570	1,657	1,783
Merchandising	190	220	377	616	683	715	784	878
Financial institutions	543	525	595	1,231	1,488	1,782	1,938	2,190
Other enterprises	82	70	120	178	207	235	254	284
Miscellaneous investments	295	284	328	641	818	879	1,058[1]	1,261
Totals, Investment	**7,614**	**7,092**	**9,477**	**13,473**	**15,569**	**17,464**	**19,005**	**20,833**
United States[2]	4,660	4,990	7,259	10,275	11,789	13,264	14,436	15,811
United Kingdom[2]	2,766	1,750	1,778	2,356	2,668	2,917	3,088	3,199
Other countries	188	352	440	842	1,112	1,283	1,481	1,823

[1] New series. [2] Includes some investments held for residents of other countries.

16.—Foreign Capital Invested in Canada by Type of Investment, classified by Estimated Distribution of Ownership, as at Dec. 31, 1959

NOTE.—Common and preferred stocks are at book values as shown in the balance sheets of the issuing companies; bonds and debentures are valued at par; and liabilities in foreign currencies are converted into Canadian dollars at par of exchange.

Type of Investment	Estimated Distribution of Ownership			Total Investments of Non-residents
	United States[1]	United Kingdom[1]	Other Countries	
	$'000,000	$'000,000	$'000,000	$'000,000
Government Securities—				
Federal	383	60	169	612
Provincial	1,509	48	28	1,585
Municipal	872	33	10	915
Totals, Government Securities	2,764	141	207	3,112
Public Utilities—				
Railways	472	783	150	1,405
Other (excluding pipelines and public enterprises)	544	125	70	739
Totals, Public Utilities	1,016	908	220	2,144
Manufacturing (excluding petroleum refining)	4,530	945	251	5,726
Petroleum and natural gas	3,108	162	185	3,455
Other mining and smelting	1,513	160	110	1,783
Merchandising	612	225	41	878
Financial institutions	1,471	413	306	2,190
Other enterprises	225	45	14	284
Miscellaneous investments	572	200	489	1,261
Totals, Investments	**15,811**	**3,199**	**1,823**	**20,833**

[1] Includes some investments held for residents of other countries.

Canadian Assets Abroad.—While there has been a great growth in non-resident investment in Canada and in the balance of indebtedness to other countries, it will be noted that Canadian assets abroad, shown in Tables 17 and 18, have continued to rise in value each year. These now represent a larger proportion of liabilities abroad than was the case before World War II, but more than half of the increase since then has been in government-owned assets such as the official reserves and the loans by the Canadian Government to other governments which were extended during the war and early postwar years. In 1959 the government credits outstanding had a value of $1,451,000,000 while official holdings of exchange amounted to $1,786,000,000 in terms of Canadian dollars. Other official Canadian assets include Canada's subscriptions to the capital of the International Bank, the International Development Association, the International Finance Corporation and the International Monetary Fund which, by March 1961, amounted to $73,700,000, $8,500,000, $3,500,000 and $543,700,000, respectively, a substantial part being offset by liabilities to these institutions.

The portion of the assets in private investments, particularly in the form of direct investments abroad by Canadian companies, is still small in relation to the corresponding non-resident stake in equities in Canada. Private long-term investments abroad by Canadians in 1959 were made up of direct investments of $2,304,000,000 and portfolio investments of $1,141,000,000. More than two-thirds of the privately owned investments were located in the United States. Direct investments in that country by Canadian businesses have grown rapidly and are found in many fields, among which the beverage and farm implement industries are particularly noteworthy.

Private investments in overseas countries are widely distributed. About one-half of the total in 1960 were located in Commonwealth countries, with slightly less in the United Kingdom than in the remainder of the Commonwealth. Most of the direct investments in the United Kingdom were in industry, while in other Commonwealth countries there were investments in mining and petroleum as well as in industry. In foreign overseas countries the largest part is in the countries of Latin America where Canadian holdings in public utilities are substantial.

17.—Canadian Assets Abroad, 1939, 1948 and 1955-59

Note.—Excludes investments of insurance companies and banks, Canada's subscriptions to international financial institutions and short-term assets, other than official holdings of gold and foreign exchange. Holdings of stocks are at book values as shown in the books of issuing companies; holdings of bonds are shown at par values. Foreign currencies are converted into Canadian dollars at current market rates. The series for portfolio investment was reconstructed in 1952 and is not strictly comparable with preceding years.

(Millions of dollars)

Assets	1939	1948	1955	1956	1957	1958r	1959
Direct investments in businesses outside Canada....	671	788	1,751	1,904	2,084	2,174	2,304
Portfolio holdings of foreign securities..............	719	605	991	1,006	1,054	1,090	1,141
Government credits..............................	31	1,878	1,635	1,565	1,515	1,484	1,451
Official balances abroad and gold..................	459	1,006	1,908	1,866	1,807	1,879	1,786
Totals..............................	**1,880**	**4,277**	**6,285**	**6,341**	**6,460**	**6,627**	**6,682**

18.—Canadian Assets Abroad, by Location of Investment, as at Dec. 31, 1959

NOTE.—See headnote to Table 17.

Location of Investment	Direct Investments	Portfolio Investment		Government Credits	Official Holdings of Exchange	Total Investments
		Stocks	Bonds	Bonds	Total	
	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000	$'000,000
United States	1,490	692	111	—	866	3,159
United Kingdom	265	25	12	1,064	6	1,372
Other Commonwealth countries	291	8	19	35	—	353
Other foreign countries	258	167	107	352	—	884
Official gold holdings	—	—	—	—	914	914
Totals	**2,304**	**892**	**249**	**1,451**	**1,786**	**6,682**

CHAPTER XXIII.—CURRENCY AND BANKING; MISCELLANEOUS COMMERCIAL FINANCE

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—CURRENCY AND BANKING*

Section 1.—The Bank of Canada

The Bank of Canada is Canada's central bank. It was incorporated under the Bank of Canada Act in 1934 and commenced operations on Mar. 11, 1935. The Act of Parliament which established the central bank charged it with the responsibility for regulating "credit and currency in the best interests of the economic life of the nation", and conferred on it certain specific powers for discharging this responsibility. Through the exercise of these powers the Bank of Canada determines broadly the combined total of the basic forms of Canadian money held by the community—currency outside banks plus deposit balances in chartered bank accounts.

By virtue of the provisions of the Bank of Canada Act, which enable the central bank to increase or decrease the total amount of cash reserves available to the chartered banks as a group, the Bank of Canada is able to determine broadly the over-all level of the total assets and deposit liabilities of the group, and hence of the combined total of currency and bank deposits. The Bank Act requires that each chartered bank maintain a minimum amount of cash reserves in the form of deposits at the Bank of Canada and holdings of Bank of Canada notes. This minimum requirement is 8 p.c. of the bank's total Canadian dollar deposit liabilities on a monthly average basis. The ability of the chartered banks as a group to expand their total assets and deposit liabilities therefore depends on the level of total cash reserves. An increase in cash reserves will encourage the banks to expand their total assets (which consist chiefly of loans and marketable securities) with a concomitant increase in deposit liabilities; a decrease in cash reserves will bring about a decline in their total assets and deposit liabilities as they seek to restore their cash reserve ratios.

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* Except where otherwise indicated, this material has been revised by the Research Department of the Bank of Canada.

The chief method by which the Bank of Canada can affect the level of cash reserves of the chartered banks, and through them the total of chartered bank deposits, is by purchases and sales of government securities. Payment by the central bank for the securities it purchases in the market adds to the cash reserves of the chartered banks as a group and puts them in a position to expand their assets and deposit liabilities. Conversely, payment to the central bank for securities it sells causes a reduction in reserves of the chartered banks and makes it necessary for them to reduce their assets and deposit liabilities.

The influence that the Bank of Canada has on credit conditions and hence on economic behaviour stems from its ability to determine broadly the level of total holdings of currency and chartered bank deposits. The trend of total holdings of these forms of money can have an influence on liquidity generally, including effects on interest rates and bond prices and the availability of credit, and on expectations regarding future financial and economic trends, all of which have some effect on decisions to spend or to save. However, many factors other than changes in the money supply also have important influences on financial and economic developments, such as: the state of economic conditions and prospects outside Canada; the competitive strength of Canadian business enterprises both at home and abroad; the character of the investment decisions and price and wage policies in domestic industries; the skills and degree of mobility of labour; and the nature of public policies at all levels of government with regard to such matters as expenditure, taxation, subsidies and the regulation of industry.

In forming its judgments in the light of changing circumstances as to whether its operations should be such as to facilitate an increase or induce a decrease in the supply of money or to hold it more or less constant, the Bank of Canada is bound by criteria laid down by Act of Parliament in the preamble to the Bank of Canada Act of 1934. In addition to the broad directive to the Bank "to regulate credit and currency in the best interests of the economic life of the nation", and "generally to promote the economic and financial welfare of the Dominion", it is also prescribed that the Bank should endeavour "to mitigate by its influence fluctuations in the general level of production, trade, prices and employment as far as may be possible within the scope of monetary action". Its operations must be based, not on any simple mechanical formula, but rather on continuous observation and appraisal of the constantly changing state of the economy as reflected in the complex pattern of economic and financial developments.

While the Bank of Canada has the power to determine the combined total of currency and chartered bank deposits, it has no means of determining how much of this total is held in the form of currency and how much in the form of chartered bank deposits. That depends on the wishes of the public, since deposits can be converted freely into notes and coin and back again. Nor does the Bank have any direct control over the growth of other forms of money or of close substitutes for money as a store of wealth in liquid form, of which there are many varieties in Canada—mainly deposit balances in savings institutions other than chartered banks and short-term securities issued by governments and corporations.

The cash reserve system in Canada, which is similar to that in a number of other countries, while placing the central bank in a position where it can determine within broad limits the total amount of chartered bank assets and deposits, leaves the allocation of bank credit and other forms of credit to the private sector of the economy. Each chartered bank can attempt to gain as large a share as possible of the total cash reserves by competing for deposits. Each bank determines how its assets will be distributed, for example, between various kinds of securities and loans to various types of borrowers. The Bank of Canada has no power to direct banks or other lenders to make funds available to certain groups or in certain regions on the same terms or on different terms than to other groups or in other regions. The influence of the central bank—based in essence on its power to expand or contract chartered bank cash reserves through its market purchases or sales of securities—is both indirect and impersonal and is brought to bear on financial conditions generally through the chartered banks and the numerous inter-connected channels of the capital market.

The powers of the Bank are set forth in the Bank of Canada Act, 1934 (RSC 1952, c. 13), revisions in which were made in 1936, 1938 and 1954. Some of these powers are outlined below.

The Bank may buy and sell securities issued or guaranteed by Canada or any province, short-term securities issued by the United Kingdom, treasury bills or other obligations of the United States, and certain classes of short-term commercial paper. The Bank is authorized by the Industrial Development Bank Act to purchase bonds and debentures issued by the Industrial Development Bank. The Bank may buy and sell gold, silver, nickel and bronze coin, and gold and silver bullion, and may also deal in foreign exchange. The Bank may accept deposits that do not bear interest from the Government of Canada, the government of any province, any chartered bank or any bank to which the Quebec Savings Bank Act applies. The Bank does not accept deposits from individuals and does not compete with the chartered banks in commercial banking fields.

The Bank acts as the fiscal agent for the Government of Canada in the payment of interest and principal and generally in respect of the management of the public debt of Canada.

The Bank has the sole right to issue paper money for circulation in Canada. Details regarding the note issue are given on p. 1110.

The Bank of Canada may vary the minimum cash reserve requirement of the chartered banks between 8 p.c. and 12 p.c. of their Canadian dollar deposit liabilities, provided that the chartered banks are given a minimum notice period of one month before each increase becomes effective and that any increase is not more than 1 p.c. during any one month. When this legislation became effective on July 1, 1954 the requirement was 8 p.c. and it has since remained at that level. (Prior to July 1, 1954, each chartered bank was required to maintain at all times cash reserves equal to not less than 5 p.c. of its Canadian dollar deposit liabilities; in practice the chartered banks as a group normally worked to a ratio of about 10 p.c.)

The Bank may make loans or advances for periods not exceeding six months to chartered banks, or to banks to which the Quebec Savings Bank Act applies, on the pledge or hypothecation of certain classes of securities. Loans or advances on the pledge or hypothecation of readily marketable securities issued or guaranteed by Canada or any province may be made to the Government of Canada or the government of any province for periods not exceeding six months. Other loans may be made to the Government of Canada or the government of any province in amounts not exceeding a fixed proportion of such government's revenue; such loans must be repaid before the end of the first quarter after the end of the fiscal year of the borrower.

The Bank of Canada is required to make public at all times the minimum rate at which it is prepared to make loans or advances; this rate is known as the Bank Rate. Since Nov. 1, 1956 the Bank Rate has been established weekly at a fixed margin of $\frac{1}{4}$ of 1 p.c. above the latest weekly average tender rate for 91-day treasury bills.

Sect. 23 of the Bank of Canada Act provides that the Bank shall maintain a reserve of gold equal to not less than 25 p.c. of its outstanding notes and deposit liabilities. This requirement was suspended in 1940 when, under the terms of the Exchange Fund Order, the Bank's gold holdings were transferred to the Exchange Fund Account to form part of Canada's official gold and United States dollar reserves. The Currency, Mint and Exchange Fund Act passed in 1952 provides that, notwithstanding Sect. 23 of the Bank of Canada Act, the Bank of Canada is not required to maintain a minimum or fixed ratio of gold or foreign exchange to its liabilities unless the Governor in Council prescribes otherwise.

The Bank is under the management of a Board of Directors composed of a Governor, a Deputy Governor and twelve Directors. The Governor and Deputy Governor are appointed for terms of seven years each by the Directors, with the approval of the Governor

General in Council. The Directors are appointed by the Minister of Finance, with the approval of the Governor General in Council, for terms of three years each. The Deputy Minister of Finance is a member of the Board but does not have the right to vote. There is an Executive Committee of the Board composed of the Governor, the Deputy Governor, one Director and the Deputy Minister of Finance (who is without a vote) which has the same powers as the Board except that its decisions must be submitted to the Board at its next meeting. In addition to the Deputy Governor who is a member of the Board, there may be one or more Deputy Governors appointed by the Board of Directors to perform such duties as are assigned by the Board.

The Governor is the chief executive officer of the Bank and Chairman of the Board of Directors. The Governor has the power to veto any action or decision of the Board of Directors or of the Executive Committee but such veto is subject to confirmation or disallowance by the Governor General in Council. In the absence of the Governor, the Deputy Governor, who is a member of the Board, exercises all the powers and functions of the Governor.

The capital of the Bank is $5,000,000 and is held entirely by the Minister of Finance. The Bank of Canada Act as amended in 1954 provides that each year 20 p.c. of the Bank's annual profits (after provision for depreciation in assets, pension funds and such matters) shall be allocated to the Rest Fund until the Rest Fund reaches an amount five times the paid-up capital of the Bank and the remainder shall be paid to the Receiver General and placed to the credit of the Consolidated Revenue Fund. At the end of 1957, the Rest Fund of the Bank reached its maximum of $25,000,000 so that, since that date, the whole of the Bank's profits have been transferred to the Receiver General.

The head office of the Bank is at Ottawa. It has agencies at Halifax, Saint John, Montreal, Ottawa, Toronto, Winnipeg, Regina, Calgary and Vancouver and is represented in St. John's and Charlottetown. The agencies are concerned chiefly with the functions of the Bank as fiscal agent for the Government of Canada and with the issue and redemption of currency. The Industrial Development Bank, which is described on the following page, is a subsidiary of the Bank of Canada.

The Bank of Canada Act requires that statements of the assets and liabilities of the Bank on each Wednesday and on the last day of each month be published in the *Canada Gazette*. A summary of the statements as at Dec. 31, 1957-60, appears in Table 1.

1.—Assets and Liabilities of the Bank of Canada, as at Dec. 31, 1957-60

Item	1957	1958	1959	1960
	$'000,000	$'000,000	$'000,000	$'000,000
Assets				
Foreign exchange	63.6	55.3	41.2	54.5
Advances to chartered and savings banks	—	2.0	—	—
Investments—				
Treasury bills of Canada	467.1	35.9	305.9	404.4
Other securities issued or guaranteed by Canada maturing within 2 years	779.2	245.2	514.5	353.4
Other securities issued or guaranteed by Canada not maturing within 2 years	1,181.2	2,340.6	1,800.2	1,931.9
Bonds and debentures issued by Industrial Development Bank	36.2	52.9	58.6	64.4
Other securities	16.7	38.5	18.5	24.4
Industrial Development Bank capital stock	25.0	25.0	25.0	25.0
Bank premises	8.6	9.8	10.9	11.5
All other assets	81.1	139.1	193.3	175.0
Totals, Assets	**2,658.7**	**2,944.4**	**2,968.1**	**3,044.4**

1.—Assets and Liabilities of the Bank of Canada, as at Dec. 31, 1957-60—concluded

Item	1957	1958	1959	1960
	$'000,000	$'000,000	$'000,000	$'000,000
Liabilities				
Capital paid up	5.0	5.0	5.0	5.0
Rest Fund	25.0	25.0	25.0	25.0
Notes in Circulation—				
Held by chartered banks	348.6	338.2	315.7	329.8
All other	1,555.1	1,659.9	1,704.8	1,731.9
Deposits—				
Government of Canada	35.4	34.9	45.6	35.7
Chartered banks	517.6	662.7	637.0	662.6
Other	31.2	25.0	34.8	33.3
Foreign currency liabilities	70.0	83.9	50.0	68.6
All other liabilities	70.8	109.9	150.2	152.5
Totals, Liabilities	**2,658.7**	**2,944.4**	**2,968.1**	**3,044.4**

The Industrial Development Bank.*—The Industrial Development Bank, a subsidiary of the Bank of Canada, was incorporated by Act of Parliament during 1944 and its banking operations commenced on Nov. 1, 1944. Its functions are described in the preamble to the Act as follows:—

> "To promote the economic welfare of Canada by increasing the effectiveness of monetary action through ensuring the availability of credit to industrial enterprises which may reasonably be expected to prove successful if a high level of national income and employment is maintained, by supplementing the activities of other lenders and by providing capital assistance to industry with particular consideration to the financing problems of small enterprises."

The President of the Industrial Development Bank is the Governor of the Bank of Canada and the Directors are the Directors of the Bank of Canada. The $25,000,000 capital stock of the Bank (completely paid up) was subscribed by the Bank of Canada. The Industrial Development Bank may also raise funds by the issue of bonds and debentures provided that its total direct liabilities and contingent liabilities in the form of guarantees and underwriting agreements do not exceed three times the aggregate of the Bank's paid-up capital and Reserve Fund.

The lending powers of the Bank may be extended only to industrial enterprises in Canada with respect to which it is empowered to:—

(1) lend money or guarantee loans;
(2) enter into underwriting agreements with regard to any issue of stock, bonds or debentures;
(3) acquire stock, bonds or debentures from the issuing corporation or any person with whom the Bank has entered into an underwriting agreement.

Industrial enterprises as defined by the Act (amended in 1956)* include: (1) manufacturing, processing, assembling, installing, overhauling, reconditioning, altering, repairing, cleaning, packaging, transporting or warehousing of goods; (2) logging, operating a mine or quarry, drilling, construction, engineering, technical surveys or scientific research; (3) generating or distributing electricity or operating a commercial air service, or the transportation of persons, or (4) supplying premises, machinery or equipment for any business mentioned in (1), (2) or (3) under a lease, contract or other arrangement whereby title to the premises, machinery or equipment is retained by the supplier.

The Bank may accept any form of collateral security against its advances, including real property. It is intended to supplement the activities of other lending agencies, not to compete with them, and the Act of incorporation requires that it should extend credit only when the Board of Directors is of the opinion that similar credit would not be available elsewhere on reasonable terms and conditions. Its lending takes the form of fixed-term capital loans rather than current operating loans. The Bank is specifically prohibited from engaging in the business of deposit banking. It has offices in the following cities: Halifax, Saint John, Quebec, Montreal, Ottawa, Toronto, London, Sudbury, Winnipeg, Regina, Calgary, Edmonton and Vancouver.

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* Since this material was prepared, the Industrial Development Bank Act was amended (SC 1960-61, c. 50), increasing the authorized capital of the Bank from $25,000,000 to $50,000,000, the borrowing authority of the Bank from three to five times the aggregate amount of its paid-up capital and Reserve Fund, and the permissible liabilities of the Bank above $200,000 from a maximum of $75,000,000 to a maximum of $200,000,000. The definition of "industrial enterprise" was extended to include any industry, trade or other business undertaking of any kind.

2.—Assets and Liabilities of the Industrial Development Bank, as at Sept. 30, 1957-60

Item	1957	1958	1959	1960
	$'000,000	$'000,000	$'000,000	$'000,000
Assets—				
Loans outstanding[1]	71.9	88.8	96.9	103.1
Other assets	1.9	1.6	1.8	3.8
Totals, Assets	**73.8**	**90.4**	**98.7**	**106.8**
Liabilities—				
Capital and reserves	36.1	37.9	39.4	41.8
Bonds and debentures outstanding	35.5	51.0	57.7	63.6
Other liabilities	2.2	1.5	1.6	1.4
Totals, Liabilities	**73.8**	**90.4**	**98.7**	**106.8**
Loan Transactions—				
Disbursements	32.6	31.2	29.3	29.7
Repayments	12.9	14.2	20.5	23.4
Loans outstanding plus undistributed authorizations	88.3	104.3	109.3	119.8
	No.	No.	No.	No.
Customers on Books	1,021[r]	1,321[r]	1,609	1,966

[1] Includes investments; the change in loans outstanding does not equal the difference between disbursements and repayments because of year-end accounting adjustments.

Section 2.—Currency

Subsection 1.—Notes and Coinage

Note Circulation.—The development by which bank notes became the chief circulating medium in Canada prior to 1935 is described in the 1938 Year Book, pp. 900-905. Those features of the development which then became permanent are outlined in the 1941 Year Book, pp. 809-810.

When the Bank of Canada commenced operations in 1935 it assumed liability for Dominion notes outstanding. These were replaced in public circulation and partly replaced in cash reserves by the Bank's legal tender notes in denominations of $1, $2, $5, $10, $20, $50 and $100. Deposits of chartered banks at the Bank of Canada completed the replacement of the old Dominion notes of $1,000 to $50,000 denomination that had previously been used as cash reserves.

The chartered banks were required under the Bank Act of 1934 to reduce gradually the issue of their own bank notes during the years 1935-45 to an amount not in excess of 25 p.c. of their paid-up capital on Mar. 11, 1935. Bank of Canada notes thus replaced chartered bank notes as the issue of the latter was reduced. Further restrictions introduced by the 1944 revision of the Bank Act cancelled the right of chartered banks to issue or re-issue notes after Jan. 1, 1945, and in January 1950 the chartered banks' liability for such of their notes issued for circulation in Canada as then remained outstanding was transferred to the Bank of Canada in return for payment of a like sum to the Bank of Canada.

3.—Bank of Canada Note Liabilities and Other Notes in Circulation, as at Dec. 31, 1951 and 1958-60

Denomination	1951	1958	1959	1960
	$'000	$'000	$'000	$'000
Bank of Canada Notes—				
$1	53,279	75,873	78,402	81,733
$2	39,132	53,597	55,076	57,622
$5	115,092	143,010	144,702	149,545
$10	451,958	533,078	521,309	519,559
$20	391,006	627,814	647,276	676,549
$25	47	46	46	46
$50	115,661	143,606	145,461	147,596
$100	271,665	391,629	395,383	396,328
$500	125	49	46	41
$1,000	9,883	15,928	19,549	19,547
Totals	1,447,848	1,984,630	2,007,250	2,048,567
Chartered banks' notes[1]	28	8,655	8,519	8,423
Dominion of Canada notes[1]	4,692	4,645	4,641	4,638
Provincial notes[1]	88	28	28	28
Defunct banks' notes[1]	11,505	88	88	88
Totals, Bank of Canada Note Liabilities	**1,464,161**	**1,998,046**	**2,020,525**	**2,061,743**
Held by—				
Chartered banks	273,070	338,176	315,703	329,841
Others	1,191,091	1,659,870	1,704,822	1,731,902

[1] Note issues in the process of being retired, the liability for which has been taken over by the Bank of Canada from the original issuers.

4.—Note Circulation in the Hands of the Public, as at Dec. 31, 1951-60

As at Dec. 31—	Bank of Canada Notes[1]	Per Capita[2]	As at Dec. 31—	Bank of Canada Notes[1]	Per Capita[2]
	$	$		$	$
1951	1,191,091,182	85.02	1956	1,497,765,781	93.14
1952	1,288,688,392	89.31	1957	1,555,115,143	93.74
1953	1,335,332,954	90.34	1958	1,659,870,299	97.36
1954	1,361,874,433	89.63	1959	1,704,822,198	97.74
1955	1,449,045,166	92.88	1960	1,731,902,386	97.22

[1] Total issue less notes held by chartered banks.

[2] Based on estimates of population as given at p. 165.

Coinage.*—Under the Currency, Mint and Exchange Fund Act (RSC 1952, c. 315), gold coins may be issued in denominations of twenty dollars, ten dollars and five dollars (nine-tenths fine or millesimal fineness, 900). Subsidiary coins include: silver coins in denominations of one dollar, 50 cents, 25 cents, 10 cents (eight-tenths fine or millesimal fineness, 800); pure nickel five-cent coins; and bronze (copper, tin and zinc) one-cent coins. Provision is made for the temporary alteration of composition in event of a shortage of prescribed metals. A tender of payment of money in coins is a legal tender in the case of gold coins issued under the authority of Sect. 4 of the Currency, Mint and Exchange Fund Act for the payment of any amount; in the case of silver coins for the payment of an amount up to $10; nickel coins for payment up to $5; and bronze coins up to 25 cents.

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* Revised by the Master of the Royal Canadian Mint, Ottawa.

5.—Canadian Coin in Circulation, as at Dec. 31, 1951-60

NOTE.—The figures shown are of net issues of coin. Figures from 1901 are given in the corresponding table of previous Year Books beginning with the 1927-28 edition.

As at Dec. 31—	Silver	Nickel	Tombac[1]	Steel	Bronze	Total	Per Capita[2]
	$	$	$	$	$	$	$
1951	78,638,143	7,815,103	599,655	1,701,849	10,794,169	99,548,919	7.11
1952	83,463,939	7,814,398	584,882	2,278,329	11,476,591	105,618,139	7.32
1953	89,550,236	7,813,081	570,847	3,109,691	12,130,181	113,174,036	7.66
1954	91,350,637	7,810,723	560,577	3,458,758	12,392,389	115,573,084	7.60
1955	95,574,457	8,076,800	555,912	3,457,712	12,956,807	120,621,688	7.62
1956	100,922,477	8,545,507	552,868	3,456,782	13,742,282	127,219,916	7.87
1957	107,116,450	8,910,869	550,743	3,455,886	14,745,243	134,779,191	7.98
1958	115,120,076	9,289,481	549,630	3,455,062	15,322,156	143,736,405	8.32
1959	123,344,059	9,865,012	549,237	3,454,209	16,150,222	153,362,739	8.68
1960	136,710,958	11,599,263	549,090	3,452,876	16,895,953	169,208,140	9.38

[1] Tombac, a copper-zinc alloy, was used to conserve nickel for war purposes; no coins of this metal have been issued since 1944. [2] Based on estimates of population as given at p. 165.

The Royal Canadian Mint.*—The Mint at Ottawa was established as a branch of the Royal Mint under the (Imperial) Coinage Act 1870 and opened on Jan. 2, 1908. In 1931 (RSC 1952, c. 240) it was constituted a branch of the Canadian Department of Finance and has since operated as the Royal Canadian Mint. From 1858 the British North American provinces, and later Canada, obtained their coins from the Royal Mint at London or from The Mint, Birmingham, England. Before that date, coins were mainly British, United States and Spanish. In its earlier years the operations of the Mint in Canada were confined to the production of gold, silver and bronze coins for domestic circulation and of British sovereigns and small coins struck under contract for Newfoundland and Jamaica.

Before 1914 only small quantities of gold bullion were refined but during World War I the Mint came to the assistance of the British Government by establishing a refinery in which nearly 20,000,000 oz.t. of South African gold were treated on Bank of England account. The subsequent development of the gold mining industry in Canada resulted in gold refining becoming one of the principal activities of the Mint. Fine gold produced from the rough bullion shipments received from the mines is purchased by the Mint and later delivered to the Bank of Canada for account of the Minister of Finance in bars of approximately 400 oz.t. each or, for those mines authorized to sell gold in the open market, the bullion is shipped according to instructions from the mines. The fine silver extracted from the rough gold is generally used for coinage purposes.

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* Revised by the Master of the Royal Canadian Mint, Ottawa.

6.—Receipts of Gold Bullion at the Royal Canadian Mint and Bullion and Coinage Issued, 1951-60

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Year	Gold Received	Gold Bullion Issued	Silver Coin Issued	Nickel Coin Issued	Steel Coin Issued	Bronze Coin Issued
	oz. t.	oz. t.	$	$	$	$
1951	4,169,480	4,167,485	5,213,677	423,003	182,829	783,329
1952	3,953,158	4,031,063	4,869,552	597	576,965	683,820
1953	3,684,074	3,626,497	6,138,686	234	831,915	655,130
1954	3,829,431	3,998,836	1,864,968	27	350,229	263,897
1955	3,947,637	3,952,764	4,269,157	267,801	—	566,863
1956	3,801,789	3,774,599	5,389,464	469,993	—	786,855
1957	3,896,084	3,776,711	6,236,429	366.493	—	1,004,221
1958	3,958,459	4,088,706	8,044,753	379,616	—	578,274
1959	3,908,640	3,836,680	8,273,563	576,680	—	829,116
1960	4,024,626	4,014,771	13,432,251	1,735,707	—	748,101

Subsection 2.—Canadian Dollar Currency and Bank Deposits

Bank of Canada statistics concerning holdings of currency and bank deposits are given in Table 7.

7.—Canadian Dollar Currency and Chartered Bank Deposits, as at Dec. 31, 1951-60

(Millions of dollars)

As at Dec. 31—	Currency Outside Banks			Chartered Bank Deposits				Total Currency and Chartered Bank Deposits[1]		
	Notes	Coin	Total	Personal Savings Deposits[2]	Government of Canada Deposits	Other Deposits[1,2]	Total[1]	Total Including Government Deposits	Held by General Public	
									Including Personal Savings Deposits	Excluding Personal Savings Deposits[2]
1951	1,191	84	1,275	4,296	88	3,100	7,484	8,759	8,671	4,375
1952	1,289	88	1,377	4,600	49	3,281	7,930	9,307	9,258	4,658
1953	1,335	94	1,430	4,756	473	3,130	8,359	9,789	9,316	4,560
1954	1,362	96	1,458	5,218	176	3,462	8,856	10,314	10,137	4,920
1955	1,449	101	1,550	5,633	517	3,697	9,847	11,397	10,880	5,248
1956	1,498	108	1,605	6,007	246	3,580	9,833	11,438	11,192	5,185
1957	1,555	112	1,667	6,108[2]	423	3,725[2]	10,256	11,923	11,500	5,392[2]
1958	1,660	121	1,781	6,844	319	4,303	11,466	13,247	12,927	6,084
1959	1,705	128	1,832	6,900	404	4,057	11,360	13,193	12,789	5,890
1960	1,732	144	1,876	7,215	510	4,313	12,037	13,914	13,404	6,189

[1] Less total float, i.e., cheques and other items in transit.

[2] The deposit balances of religious, educational and welfare institutions and personal accounts used mainly for business purposes were reclassified from "personal savings deposits" to "other notice deposits" as at Sept. 30, 1957, in the returns of the banks to the Department of Finance; from that date the figures are thus not comparable with those for previous years. The amount of deposits reclassified was approximately $140,000,000.

Section 3.—Commercial Banking

The early history of currency and banking in Canada is given in the 1938 Year Book, pp. 900-905. A list of the banks at Confederation appears in the 1940 Year Book, p. 897, and bank absorptions since 1867 are given in the 1941 edition, pp. 812-813. A table in the 1937 Year Book, pp. 894-895, shows the insolvencies since Confederation; the last insolvency occurred in 1923.

COMMERCIAL BANKING IN CANADA*

The Canadian commercial banking system consists of eight privately owned banks, chartered by Parliament and operating under the provisions of the Bank Act. Of these eight, five are nation-wide institutions; two operate mainly in the Province of Quebec and in other French-speaking areas and one, a subsidiary of a Netherlands bank, has a branch in each of the three largest cities. At the end of 1960, these banks together operated 5,201 banking offices of which 5,051 were in Canada and 150 abroad. At that date Canada had roughly one banking office for every 3,600 people, compared with one for 4,000 in the United Kingdom and one for 7,300 in the United States. These facts illustrate the chief distinguishing features of the Canadian banking system: a relatively small number of large banks having an extensive network of branches, operating under a single legislative jurisdiction (the Federal Government) and under one detailed and comprehensive statute (the Bank Act). This system thus contrasts strongly with that of the United States, where both State and Federal Governments have power to legislate on banking, where most State laws still contain a variety of restrictions on the operation of branches, and where there is a large number of small banks. It also contrasts in many respect with British banking which (though also operating through a widespread system of branches) is subject to no specific code of banking legislation such as the Canadian Bank Act.

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* Prepared under the direction of J. Douglas Gibson, General Manager of The Bank of Nova Scotia.

Since the first banks were established during the first quarter of the nineteenth century,* the commercial banking system has developed in response to the changing needs of the Canadian economy, an evolution which is still in rapid progress today. Canadian economic development has been characterized by two main features—successive but by no means continuous periods of rapid geographical expansion of settlement, and a continued dependence on export markets as new natural resources (agricultural land, forests and minerals) were exploited. Thus, Canadian banking has continually had to migrate to new areas and to find appropriate methods of financing new industries and new products; and it has from the beginning possessed a strongly "international" character† with a good deal of emphasis on the financing of foreign trade, on foreign exchange operations, and on correspondent relations with foreign banks. At the same time, as the regional isolation which was so marked in British North America before Confederation has gradually broken down and the economy has been integrated, the Canadian banks, originating in local areas, have become part of a nation-wide banking system, in part by process of amalgamation which was particularly marked in the first twenty-five years of the present century.

Bank Legislation

From the first, banks in what is now Canada sought to operate under Acts of incorporation (charters) passed by the legislatures of the colonies in which they operated. As new banks were incorporated and older ones obtained charter renewals, there developed in the bank charters themselves a quite extensive and fairly uniform code of banking law. This occurred partly because the colonial authorities in Britain (until about 1840) endeavoured to have certain general rules and safeguards inserted in all charters, and partly in response to developing Canadian experience in banking. At Confederation, responsibility for banking and currency was given to the Dominion Government and in 1871 the first general Bank Act was passed. This legislation is subject to review and revision every ten years, a feature that has helped to keep the banking system adapted to the needs of a changing economy.

From this historical process certain characteristic features of the Canadian financial system have emerged—notably the traditional emphasis of the chartered banks on "commercial" banking. The provision of mortgage funds and long-term industrial capital and the performance of trust functions were for the most part left to the other financial institutions which gradually developed. The early banks were established by merchants for merchants. Their note issues provided a badly needed medium of internal exchange and they advanced working capital to finance the processes of trade. The aim was to make lending as far as possible short-term and self-liquidating. The bank charters from the first contained prohibitions against lending on the security of real property, except as secondary or subsequent security. This continued to be a feature of Canadian banking law and was, indeed, well suited to a system where liquidity of assets was very necessary because the banks' liabilities were mainly of a very short-term character, i.e., notes and deposits paid on demand. (The banks' note issues were long the most important part of the circulating medium of the country. They continued to issue notes until after the Bank of Canada was created in 1935, when their note-issuing privilege was gradually withdrawn.) Now, however, exceptions to the rule against lending upon security of real property, incorporated in the Bank Act in 1944 and 1954, allow the banks to participate in government-guaranteed loans to farmers and fishermen and for housing constructed under the National Housing Act, to lend to oil companies on the security of oil "in, under or upon the ground" and production equipment, and to extend their consumer-finance lending by taking chattel mortgages.

Another distinctive feature of Canadian bank lending arrangements is that contained in Sect. 88 of the Bank Act. This, too, is an exception to the rule against lending on the security of goods and property and was developed over a long period to facilitate particular kinds of lending. It enables banks to make advances on the security of natural products and goods, wares and merchandise while they remain in the borrower's possession. These 'pledge' arrangements have facilitated loans to small businesses and farmers and have aided in commercial and manufacturing development, while giving the banks a reasonable degree of protection for their loans.

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* See introductory paragraph to Section 3.

† The larger Canadian banks have long maintained offices in London and New York. In addition, some Canadian banks for more than half a century have been providing an important part of commercial banking facilities in the Caribbean area. See Table 10, p. 1122.

Today the Bank Act has become a most detailed and comprehensive piece of legislation which provides for the internal regulation and organization of the banks, for the auditing of their accounts, for the ways in which their capital stock may be issued and transferred, their dividends paid, and their affairs settled in case of amalgamation, winding-up or insolvency. In addition it states what cash reserves the banks must keep, what reports they must make to the Government and to the Bank of Canada about their affairs and sets forth a variety of rules governing the conduct of business with the public. The Bank Act also specifies the maximum rate of interest that may be charged on bank loans. (Since the 1944 Bank Act Revision this ceiling has been 6 p.c., replacing the 7-p.c. ceiling that had prevailed since 1871. The reduction came toward the end of a long period of 'easy money' and has not been revised upwards since.) The banks derive their corporate existence from the Act, which states that "each bank enumerated in Schedule A is a body politic and corporate and this Act is its charter"; successive Bank Acts have empowered the banks to do business for a period of ten years, until the next revision of the Act.

Banking Operations

Operating under the Bank Act, the chartered banks at their branches accept deposits from the public, make loans covering a wide range of commercial, industrial, agricultural and consumer activities, deal in foreign exchange, receive and pay out Bank of Canada notes and coin, provide safekeeping facilities, and perform a variety of other services coming within the scope of the general business of banking. The head office of a Canadian bank does not transact ordinary day-to-day business with the public; it performs general administration and policy-making functions, manages the bank's investment portfolio, does its centralized accounting work, and maintains specialized departments devoted to inspection of branch operations, the development of branch office methods, the acquisition of new business, premises, staff, arrangements with foreign banks, advertising, etc. The Head Office, too, is responsible for supervision of branch lending activities, although in recent years, with the great growth in the number of bank branches in all parts of the country, there has been a considerable decentralization of credit supervision in a network of regional offices. Indeed, since World War II there have been a number of important changes in the organization of banking activities. For one thing, mechanization of office work has proceeded rapidly. Concurrently, women, who entered banking in large numbers during the Second World War when male staff joined the services, have become an increasingly important part of bank personnel. Today over 35,000 women account for not far from 60 p.c. of bank employees, compared with some 5,000 before the War who comprised less than 25 p.c. of total staff.

Under its branch system, Canadian banking is able to provide standard banking facilities throughout the country. Every branch, even the smallest, can provide all banking services, and each has behind it the resources of a large bank, which means that lending requirements can be met just as well by a branch in a small town or a suburban branch as in the main branches of a large city. Branch banking also provides an excellent training for Canadian bank officers, through the system of promotion and transfer from branch to branch. Almost without exception, the chief executives of the Canadian banks have grown up in the service and have been trained in this way. And, it should be mentioned, with modern methods and an expanding banking system, opportunities for rapid promotion to the manager level and higher have never been better than in recent years.

The branch system has proved to be most flexible and Canadian banking has been able to keep pace with settlement and economic development even during its periods of most rapid growth. For example, in the fifteen years before the First World War, when the western wheat growing industry was established and the whole economy experienced a boom unparalleled until after the Second World War, there was a tremendous expansion in banking facilities; this continued when the War was over, partly because of keen competition. The number of branches in Canada rose from 555 in 1897 to 4,676 at the end of 1920. This number was not again equalled until 1958; during the 1920's and 1930's the number of branches declined partly because motor transportation brought a general movement of Canadian commercial business to larger centres, but also because of bank amalgamations and particularly because of the need to eliminate duplicate facilities during the difficult times of the depression. Wartime staff problems and other operating difficulties brought some further decline. Since the end of the Second World War, however, with a rapidly expanding economy, sharply rising population and growing urbanization, new branches have again been opening at a very rapid rate. As in the early days of the century, offices have been established along the frontiers of the economy, in new towns, oil fields and mining camps, as well as in the old-established urban centres where industrial and commercial growth have so enlarged the demand for banking services. The banks have also gone out to meet the banking needs of new groups of suburban dwellers, establishing offices in shopping centres and following new trends in architecture to make their premises there and elsewhere as attractive as possible. In all, the number of banking offices in Canada, which was about 3,300 at the end of 1939 and 3,100 at the end of 1945, grew by almost 2,000 in the fifteen postwar years.

As the growth in the number of branches suggests, Canadian banks have been taking full advantage of the expansive postwar atmosphere to extend the volume and variety of their services to industry and to individuals. Indeed, the increased costs involved in the operation of so many new and enlarged branches have been one factor in the banks' endeavours to make complete use of their facilities. Strongly competing for customers, they have offered a wide variety of new deposit arrangements, including new savings programs of various kinds and new forms of chequing accounts, and have greatly broadened their lending activities.

By the end of the War, the banks had experienced more than fifteen years of restricted demand for commercial credit. Loans had declined sharply during the depression and shown only a slightly rising trend during the pre-war years of incomplete recovery and, of course, in the wartime economy bank lending was subject to a variety of restrictive influences. The result was a marked change in the composition of bank assets; by the end of 1945 security holdings accounted for about 55 p.c. of the banks' total assets, compared with a little over 40 p.c. just before the War and only about 15 p.c. in 1930. In the early years of postwar reconstruction, the economic control apparatus created for the War was gradually dismantled. The expansion of the private sector of the economy and the contraction of the government sector was quickly reflected in a shift of bank assets from government securities to commercial loans. Between the end of 1945 and the end of 1950, bank loans in Canadian currency increased from about 21 p.c. to 31 p.c. of total assets. There was, at the same time, a rapid growth in total assets, as the monetary authorities leaned to the side of relatively easy money conditions to stimulate the economy and to ward off the widely anticipated postwar recession. In the five years ended Dec. 31, 1950, total assets expanded from about $7,300,000,000 to $9,400,000,000, almost all of the increase being in Canadian assets.

It was not until the outbreak of the Korean war in June 1950, that the fear of inflation, arising from the heavy demands on Canadian resources, led to the adoption of restraining measures. Since then the banks have experienced substantial changes in their credit-granting capacity, as the country's official monetary policy was adapted to meet changes in business conditions. Alternating periods of ease and restraint have been marked by periods of rapidly rising bank assets followed by levelling-off phases, though never by actual declines.

The Korean boom of 1950-51 was followed, after only a short pause, by the investment boom of 1953-54. Recession in 1954-55 was accompanied by an easy monetary policy, during which the banks built up their liquid assets in the form of government bonds. Then a second and greater investment boom got under way in late 1955, which carried the Canadian economy and the banking system into another period when resources were strained to the limit. At this time new measures of restraint were introduced into the Canadian banking system by the monetary authorities, including an agreed secondary reserve ratio of 7 p.c. in addition to the cash reserves of 8 p.c. already prescribed in the Bank Act Revision of 1954. A further agreement with the Bank of Canada was aimed at restraining term loans for capital purposes* and in 1956 bank loans to instalment finance companies were also put under some restraint. The boom of 1955-57 was followed by a mild recession in 1957-58, moderate recovery in 1958-59 and slackening again in 1960. In this period the banks have not regained the liquidity which characterized earlier postwar recessions, and there has been a growing need to husband resources carefully for the various and growing alternative outlets which developed as the result of economic growth, and of the efforts of both the Government and the banks themselves to provide new uses for bank credit.

One of the first government measures was the Farm Improvement Loan Act of 1944, under which the chartered banks were authorized to make loans to farmers for the purchase of equipment and livestock and for making various improvements to their farm buildings and facilities. These loans are often for sizable amounts (the average in 1960 was about $1,500) and the terms have been gradually extended to a maximum sum of $7,500 outstanding to any one borrower with a maximum period of ten years (four years for implements). The banks are guaranteed against loss up to 10 p.c. of their loans made during the three-year "lending periods", up to a maximum total of loans by all banks. This total is $400,000,000 for the lending period to end in mid-1962. By the end of 1960 the total amount of loans made under this Act was more than $1,000,000,000.

The 1954 Revision of the Bank Act introduced a major change in banking practice, by enabling the banks to acquire mortgages issued under the National Housing Act. Previously, as already mentioned, the banks could acquire the security of real property only to support existing loans. But the very heavy demand for housing finance, produced by the rapid postwar expansion of the Canadian population, led the Government to seek new sources of savings for the housing market, and the Canadian chartered banks are one of the major avenues through which savings are gathered. About 35 p.c. of all NHA mortgage loans in the years 1954-59 were made by the chartered banks. At the end of 1959, the NHA interest rate was raised to 6¾ p.c. and the banks withdrew from this field of lending. Notwithstanding this, by Dec. 31, 1960 they held some $970,000,000 in NHA mortgages, representing about 6 p.c. of total assets.

Another change affecting housing in the 1954 Revision enabled the banks to make Home Improvement Loans under a guarantee system rather similar to the one developed for Farm Improvement Loans. By the end of 1960, Home Improvement Loans amounting to $195,000,000 had been approved and the banks had about $56,000,000 of such loans on their books.

A more recent measure, passed in November 1960, is the Small Business Loans Act, which guarantees, under terms to the banks almost exactly similar to those of the Farm Improvement Loan Act, certain types of bank loan to small businesses for the purposes of making capital improvements to premises and equipment. This provides for loans that do not fall within the usual scope of bank lending to small business, by reason of the term nature of the loan, together with the lack of collateral resources of the borrower. Of course, chartered banks already make loans to small businesses for a great variety of purposes, including many of a medium-term character; indeed, the working capital loan to the small-size or medium-size industry or commercial enterprise is the traditional stock-in-trade business of the chartered banks.

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* Such loans were almost entirely a postwar innovation in Canadian lending practice, and had increased markedly during the easy-money period of 1954-55. Since 1956, term lending has generally been confined within narrower limits though it is still practised when conditions permit.

Still another area of lending which has expanded greatly in recent years is that of consumer credit. While the banks have always made some personal loans, they have not until recently moved aggressively into the general field of lending to the general public for the purchase of automobiles, consumer durables and debt consolidation. Following the 1954 Bank Act Revision, and partly as a result of the change then made which enabled the banks to take chattel mortgage security, some of the banks have developed extensive consumer credit divisions. Personal loans made by the banks, other than those secured by stocks and bonds and Home Improvement loans, mounted from $420,000,000 at the end of 1957 to $873,000,000 outstanding at Mar. 31, 1961. During this same period, the outstanding total of retail consumer credit granted by others, such as small loans companies, instalment finance companies, and department stores and other retail dealers, increased from $1,970,000,000 to $2,215,000,000. This penetration of the banks into the retail credit field is perhaps the most significant development of the postwar period in the Canadian banking system. It has brought the banks close to the general public in those matters that touch the major financial undertakings of most families—the house, the car, the major appliances, the medical and education expenses.

Outside of Canada, the Canadian banks have continued to expand their branch systems in the Caribbean area, though the two Canadian banks operating in Cuba have found it necessary to withdraw. Elsewhere abroad, the banks have expanded their representation in South America and in Europe. In recent years the growth of an international money market, following the economic recovery in Europe and the restoration of confidence in the stability of the Western economies and their currencies, has led to large movements of Western capital from one centre to another. The Canadian banks have participated extensively in this international money market, mainly through New York and London where most of them maintain large offices.

The postwar growth in bank assets has been accompanied by a substantial increase in total earnings. Earnings per share of capital employed did not increase to the same extent, however, as the banks found it necessary to raise new funds from time to time after 1950 in order to maintain an appropriate relationship between their shareholders' capital and the rapidly rising level of risk assets. The banks have been among the largest issuers of new share capital to Canadians in the postwar period.

Subsection 1.—Statistics of Chartered Banks

Branches of Chartered Banks.—Although there are fewer chartered banks now than at the beginning of the century, there has been a great increase in the number of branch banking offices. As a result of amalgamations, the number of banks declined from 34 in 1901 to 10 in 1931, and remained at that figure until the incorporation of a new bank—the Mercantile Bank of Canada—in 1953 brought the total to 11. Since then the amalgamation in 1955 of the Bank of Toronto and the Dominion Bank as the Toronto–Dominion Bank, the amalgamation of Barclays Bank (Canada) with the Imperial Bank of Canada in 1956 and the amalgamation of the Canadian Bank of Commerce and the Imperial Bank of Canada as the Canadian Imperial Bank of Commerce on June 1, 1961 have reduced this number to eight. The number of branches of chartered banks in each province periodically from 1868 is given in Table 8.

8.—Branches of Chartered Banks, by Province, as at Dec. 31 for Certain Years 1868-1960

Note.—Figures for 1920 and subsequent years include sub-agencies in Canada receiving deposits for the banks employing them; there were 756 such sub-agencies at Dec. 31, 1960.

Province or Territory	1868	1902	1905	1920	1926	1930	1940	1943	1946	1950	1958	1959	1960
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland	—	—	—	—	—	—	—	—	—	39	65	69	71
Prince Edward Island	—	9	10	41	28	28	25	23	23	23	24	27	27
Nova Scotia	5	89	101	169	134	138	134	126	127	144	164	169	173
New Brunswick	4	35	49	121	101	102	97	93	96	100	110	112	113
Quebec	12	137	196	1,150	1,072	1,183	1,083	1,041	1,067	1,164	1,363	1,405	1,427
Ontario	100	349	549	1,586	1,326	1,409	1,208	1,092	1,117	1,257	1,640	1,711	1,785
Manitoba	—	52	95	349	224	239	162	148	151	165	216	226	234
Saskatchewan	—	30	87	591	427	447	233	213	226	238	275	283	296
Alberta				424	269	304	172	163	190	246	352	372	394
British Columbia	2	46	55	242	186	229	192	180	216	294	455	492	514
Yukon and N.W.T.	—	—	3	3	3	4	5	5	6	9	13	13	17
Canada	**123**	**747**	**1,145**	**4,676**	**3,770**	**4,083**	**3,311**	**3,084**	**3,219**	**3,679**	**4,677**	**4,879**	**5,051**

9.—Branches of Individual Canadian Chartered Banks, by Province, as at Dec. 31, 1960

Note.—This table includes 756 sub-agencies in Canada for receiving deposits.

Bank	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Bank of Montreal	19	2	25	17	160	308	44	52	91	119	5	842
Bank of Nova Scotia	29	8	49	38	46	232	16	31	46	65	—	560
Banque Canadienne Nationale	—	—	—	—	573	19	4	—	—	—	—	596
Banque Provinciale du Canada	—	3	—	18	313	23	—	—	—	—	—	357
Canadian Bank of Commerce[1]	6	8	24	11	123	361	49	57	83	141	6	869
Imperial Bank of Canada[1]	1	—	1	2	24	191	13	30	47	33	1	343
Mercantile Bank of Canada	—	—	—	—	1	1	—	—	—	1	—	3
Royal Bank of Canada	16	5	71	22	128	329	70	86	81	104	5	917
Toronto-Dominion Bank	0	1	3	5	59	321	38	40	46	51	—	564
Totals	**71**	**27**	**173**	**113**	**1,427**	**1,785**	**234**	**296**	**394**	**514**	**17**	**5,051**

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[1] The Canadian Bank of Commerce and the Imperial Bank of Canada were amalgamated as the Canadian Imperial Bank of Commerce on June 1, 1961.

10.—Branches of Individual Canadian Chartered Banks Outside Canada, as at Dec. 31, 1958-60

NOTE.—This table does not include sub-agencies operating outside Canada, of which there were 20 in 1960.

Bank and Location	1958	1959	1960
	No.	No.	No.
Bank of Montreal—			
United Kingdom	2	2	2
United States	2	2	2
France	3	3	3
Germany	4	4	4
Bank of Nova Scotia—			
United Kingdom	2	2	2
British West Indies	20	21	22
Dominican Republic	2	2	2
United States	1	1	1
Cuba	8	8	—
Puerto Rico	3	3	3
Trinidad	1	2	2
Canadian Bank of Commerce—[1]			
United Kingdom	2	2	2
British West Indies	5	9	10
United States	5	5	5
Royal Bank of Canada—			
United Kingdom	2	2	2
British West Indies	15	20	22
United States	1	1	1
Cuba	23	24	—
Puerto Rico	5	5	5
Central and South America	25	25	26
Haiti	1	1	1
Dominican Republic	6	7	8
France	1	1	1
Toronto-Dominion—			
United Kingdom	1	2	2
United States	1	1	1
Banque Canadienne Nationale—			
France	1	1	1
Totals	**142**	**156**	**130**

[1] The Canadian Bank of Commerce and the Imperial Bank of Canada were amalgamated as the Canadian Imperial Bank of Commerce on June 1, 1961.

Financial Statistics of the Chartered Banks.—The classification of chartered bank assets and liabilities was revised by the Bank of Canada Act 1954, so that the statistical series given in the following tables begins with that year. Figures shown in Table 11 prior to July 1954 have been adjusted to comply with the new classification. Month-end data are available from Dec. 31, 1954, to date in the Bank of Canada *Statistical Summary*.

11.—Assets and Liabilities of the Chartered Banks, as at Dec. 31, 1951-60

(Millions of dollars)

As at Dec. 31—	Assets							
	Bank of Canada Deposits and Notes	Canadian Day-to-Day Loans	Treasury Bills	Government of Canada Direct and Guaranteed Bonds	Other Canadian Securities, Insured Residential Mortgages and Loans in Canada	Canadian Dollar Items in Transit (net)	Foreign Cash Items, Securities and Loans	Total Assets[1]
1951	892	—	236	2,518	4,052	512	869	9,458
1952	899	—	138	2,647	4,353	752	980	10,128
1953	888	—	244	2,516	4,878	751	1,064	10,656
1954	791	68	360	2,953	4,963	827	1,142	11,433
1955	840	81	427	2,632	6,207	1,002	1,127	12,702
1956	882	74	740	1,675	6,820	1,330	1,486	13,428
1957	866	210	805	1,835	6,953	1,151	1,970	14,244
1958	1,001	123	950	2,562	7,365	1,224	2,165	15,840
1959	953	101	974	1,827	8,172	919	2,393	15,835
1960	992	172	967	2,088	8,511	884	2,725	16,917

[1] Includes other items not specified.

11.—Assets and Liabilities of the Chartered Banks, as at Dec. 31, 1951-60—concluded

As at Dec. 31—	Liabilities							
	Canadian Dollar Deposits					Foreign Currency Deposits	Shareholders' Equity	Total Liabilities[1]
	Government of Canada	Notice		All Other	Total			
		Personal Savings	Other Notice					
1951	88	4,296	316	3,273	7,973	878	375	9,458
1952	49	4,600	325	3,662	8,636	905	381	10,128
1953	473	4,756	278	3,603	9,111	963	419	10,656
1954	176	5,218	397	3,891	9,683	1,030	521	11,433
1955	517	5,633	464	4,234	10,848	1,056	567	12,702
1956	246	6,007	444	4,465	11,162	1,369	653	13,428
1957	423	6,108	548	4,328	11,407	1,827	732	14,244
1958	319	6,844	618	4,909	12,690	2,077	813	15,840
1959	404	6,900	558	4,418	12,279	2,372	926	15,835
1960	510	7,215	576	4,621	12,921	2,654	1,004	16,917

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[1] Includes other items not specified.

12.—Detailed Statement of Chartered Bank Assets and Liabilities, as at Dec. 31, 1959 and 1960

Assets	1959	1960
	$'000	$'000
Assets—		
Gold and coin in Canada	25,509	39,184
Gold and coin outside Canada	1,352	1,032
Notes of and deposits with Bank of Canada	952,685	992,426
Government and bank notes other than Canadian	52,765	43,931
Deposits with other banks in Canadian currency	4,252	4,842
Deposits with other banks in currencies other than Canadian	360,842	531,516
Cheques and other items in transit (net)	864,963	832,874
Government of Canada treasury bills	973,807	967,209
Other Government of Canada direct and guaranteed securities maturing within two years, not exceeding market value	657,484	615,288
Government of Canada direct and guaranteed securities maturing after two years, not exceeding market value	1,169,260	1,472,389
Canadian provincial government direct and guaranteed securities, not exceeding market value	346,168	323,819
Canadian municipal and school corporation securities, not exceeding market value.	204,154	207,962
Other Canadian securities, not exceeding market value	512,401	473,009
Securities other than Canadian, not exceeding market value	525,973	556,838
Mortgages and hypothecs insured under the National Housing Act 1954, less provision for estimated loss	967,870	970,592
Call and short loans in Canada to brokers and investment dealers, secured	239,872	310,208
Call and short loans outside Canada to brokers and investment dealers, secured	711,064	814,479
Loans to Canadian provincial governments	38,574	127,726
Loans to Canadian municipalities and school corporations, less provision for estimated loss	231,268	216,922
Other current loans in Canada, less provision for estimated loss	5,731,669	6,050,474
Other current loans outside Canada, less provision for estimated loss	794,301	813,754
Non-current loans, less provision for estimated loss	1,399	1,425
Bank premises at cost, less amounts written off	205,780	233,760
Shares of and loans to corporations controlled by the bank	48,336	51,443
Customers' liability under acceptances, guarantees and letters of credit as *per contra*	206,808	257,220
Other assets	6,368	6,774
Totals, Assets	**15,834,924**	**16,917,096**

12.—Detailed Statement of Chartered Bank Assets and Liabilities, as at Dec. 31, 1959 and 1960—concluded

Liabilities	1959	1960
	$'000	$'000
Liabilities—		
Deposits by Government of Canada in Canadian currency	403,585	509,892
Deposits by Canadian provincial governments in Canadian currency	136,357	118,836
Deposits by other banks in Canadian currency	137,656	200,540
Deposits by other banks in currencies other than Canadian	529,636	646,881
Personal savings deposits payable after notice, in Canada, in Canadian currency	6,899,639	7,214,692
Other deposits payable after notice, in Canadian currency	557,542	575,861
Other deposits payable on demand, in Canadian currency	4,144,353	4,301,354
Other deposits in currencies other than Canadian	1,842,151	2,007,443
Acceptances, guarantees and letters of credit	206,808	257,220
Other liabilities	51,549	80,740
Capital paid up	254,115	265,564
Rest account	661,378	730,154
Undivided profits at latest fiscal year-end	10,155	7,919
Totals, Liabilities	**15,834,924**	**16,917,096**

13.—Canadian Cash Reserves, 1951-60

Note.—For periods prior to July 1954 all figures are daily averages; from July 1954, in accordance with the Bank Act 1954, Bank of Canada deposits are averages of the juridical days in the month shown while Bank of Canada notes and Canadian dollar deposits are averages of the four consecutive Wednesdays ending with the second last Wednesday in the previous month.

(Millions of dollars)

Year	Cash Reserves			Canadian Dollar Deposit Liabilities[1]	Average Cash Reserve Ratio[2]
	Bank of Canada Deposits	Bank of Canada Notes	Total		
1951	567	225	792	7,759	10.2
1952	606	239	844	8,110	10.4
1953	627	256	883	8,624	10.2
1954—January to June	634	260	894	8,820	10.1
1954—July to December	525	286	811	9,097	8.9
1955	541	293	834	9,915	8.4
1956	548	325	873	10,527	8.3
1957	535	335	870	10,601	8.2
1958	607	336	943	11,452	8.2
1959	648	351	999	12,187	8.2
1960	625	360	985	12,052	8.2

[1] From July 1954 the figures are not adjusted for items in transit and are not strictly comparable with the figures for earlier periods. [2] Prior to July 1, 1954, the statutory minimum requirement was 5 p.c. for each day; since that date it has been a monthly average of 8 p.c.

Liquid Asset Ratio.—In the course of discussions with the chartered banks in November and December 1955, the Bank of Canada urged the adoption of a standard practice regarding the maintenance of a minimum ratio of liquid assets (cash, day-to-day loans and treasury bills) to deposits. The purpose of this suggestion was to establish a working principle of bank operations which would help the central bank in the task of restraining inflationary pressures that might threaten in the future. After discussion the banks agreed to work to achieve, by May 31, 1956, a minimum liquid asset ratio of 15 p.c. which they would endeavour to maintain on a daily average basis from June on. On this basis, fluctuations above or below 15 p.c. might occur from day to day or week to week, but for the month as a whole the average would not be below the target ratio. From June 1956 the banks have maintained a daily average ratio of at least 15 p.c.

14.—Classification of Chartered Bank Deposit Liabilities Payable to the Public in Canada in Canadian Currency, as at Sept. 30, 1959 and 1960

Deposit Accounts of the Public of—	1959			1960		
	Personal Savings Deposit Accounts	Other Deposit Accounts of the Public	Total Deposit Accounts of the Public	Personal Savings Deposit Accounts	Other Deposit Accounts of the Public	Total Deposit Accounts of the Public
	No.	No.	No.	No.	No.	No.
Less than $100	5,267,719	997,856	6,265,575	5,574,443	1,087,231	6,661,674
$100 or over but less than $1,000	3,098,516	775,775	3,874,291	3,146,373	828,148	3,974,521
$1,000 or over but less than $10,000	1,575,198	320,823	1,896,021	1,604,617	335,487	1,940,104
$10,000 or over but less than $100,000	74,815	54,593	129,408	75,274	54,902	130,176
$100,000 or over	896	5,528	6,424	795	5,587	6,382
Totals, Deposits	**10,017,144**	**2,154,575**	**12,171,719**	**10,401,502**	**2,311,355**	**12,712,857**

15.—Classification of Chartered Bank Loans in Canadian Currency, as at Dec. 31, 1959 and 1960

Class of Loan	1959	1960
	$'000,000	$'000,000
General Loans—		
Personal	1,060.9	1,199.2
To individuals, fully secured by marketable bonds and stocks	*282.3*	*286.4*
Home improvement loans	*59.9*	*56.0*
To individuals, not elsewhere classified	*718.7*	*856.8*
Farmers—		
Farm Improvement Loans Act	160.2	178.1
Other farm loans	229.3	241.5
Industry	1,231.7	1,241.0
Chemical and rubber products	*67.6*	*49.2*
Electrical apparatus and supplies	*58.2*	*60.9*
Foods, beverages and tobacco	*211.8*	*229.3*
Forest products	*165.2*	*179.7*
Furniture	*23.3*	*24.4*
Iron and steel products	*188.9*	*197.7*
Mining and mine products	*110.0*	*85.9*
Petroleum and products	*98.2*	*116.4*
Textiles, leather and clothing	*160.9*	*161.0*
Transportation equipment	*74.5*	*62.2*
Other products	*73.0*	*74.2*
Merchandisers	821.5	858.4
Construction contractors	308.2	309.0
Public utilities, transportation and communications	170.1	216.7
Other business	551.8	594.5
Religious, educational, health and welfare institutions	167.8	193.8
Totals, General Loans	**4,701.4**	**5,032.1**
Other Loans—		
Provincial governments	38.6	127.7
Municipal governments and school districts	231.3	216.9
Stockbrokers	71.7	64.9
Investment dealers	67.1	73.0
Loans to finance the purchase of Canada Savings Bonds	187.8	185.9
Grain dealers and exporters	434.4	462.9
Instalment and other finance companies	409.4	371.0
Totals, Other Loans	**1,440.3**	**1,502.3**
Grand Totals, Loans in Canadian Currency	**6,141.7**	**6,534.5**

16.—Chartered Bank Earnings, Expenses and Additions to Shareholders' Equity, Fiscal Years Ended in 1956-60

NOTE.—The financial years of six banks end on Oct. 31, two on Nov. 30 and one on Sept. 30.

(Millions of dollars)

Item	1956	1957	1958	1959	1960
Current Operating Earnings—					
Interest and discount on loans	314.2	380.6	386.9	455.1	525.5
Interest, dividends and trading profits on securities[1]	102.8	118.4	160.5	169.4	182.3
Exchange, commission, service charges and other current operating earnings	96.5	109.5	126.0	122.3	134.6
Totals, Current Operating Earnings	513.5	608.5	673.4	746.8	842.4
Current Operating Expenses—[2]					
Interest on deposits	129.1	183.4	203.4	241.2	270.9
Remuneration to employees	167.8	188.3	198.0	211.6	229.7
Contributions to pension funds	14.0	13.8	12.3	13.1	13.2
Provision for depreciation of bank premises	11.4	12.7	14.3	16.4	18.4
Other current operating expenses[3]	77.5	86.0	91.9	102.5	113.7
Totals, Current Operating Expenses[2]	399.8	484.2	519.9	584.8	645.9
Net current operating earnings[2]	113.7	124.3	153.5	162.0	196.5
Capital profits and non-recurring items[4]	3.1	0.4	1.5	3.3	3.7
Less provision for losses and addition to inner reserves, net[5]	*14.1*	*2.8*	*16.0*	*32.3*	*25.2*
Less provision for income taxes[6]	*41.7*	*56.6*	*69.6*	*65.2*	*90.7*
Leaving for dividends and shareholders' equity	61.0	65.3	69.4	67.8	84.3
Dividends to shareholders	31.9	35.4	40.0	47.6	54.0
Addition to shareholders' equity	29.1	29.9	29.4	20.2	30.3
ADDITIONS TO SHAREHOLDERS' EQUITY					
Undivided Profits—					
From operating earnings, net after transfers to rest account	−5.7	3.2	−1.5	2.7	−2.2
Rest Account—					
From operating earnings and undivided profits	15.9	8.0	14.2	9.0	16.8
From retransfers from inner reserves	19.0	18.7	16.8	8.5	15.7
From premium on new shares	42.1	33.3	28.6	72.7	36.2
Capital Paid Up—					
From issue of new shares	14.2	16.5	10.5	31.7	11.5
NET ADDITION TO SHAREHOLDERS' EQUITY	85.5	79.7	68.6	124.7	78.0

[1] Realized profits and losses on disposal of securities are included in operating earnings. [2] Before provision for income taxes, losses, and transfers to inner reserves. [3] Includes taxes other than income taxes. [4] Profits and losses on sale of fixed assets and adjustments relating to prior years. [5] After amounts retransferred to rest account. [6] Includes income taxes on taxable portion of additions to and amounts retransferred from inner reserves, and foreign income taxes.

Cheque Payments.—A monthly record of the amounts of cheques charged to customer accounts at all chartered bank offices in 35 major clearing-house centres of Canada is available from 1924. Except for a minor setback in 1938, the value of cheques cashed shows a continuously upward trend from 1932, the low point of the depression years. The total of $269,619,054,000 in 1960 was a record, 772 p.c. greater than in 1938; the increase equalled the gain in gross national product during the same period. The advance was well distributed throughout Canada's five economic areas. British Columbia showed the largest gain with an increase of 830 p.c. Ontario was second with an advance of 808 p.c., followed by the Prairie Provinces, the Atlantic Provinces and Quebec.* As compared with 1959, all five economic areas showed gains, with Ontario accounting for nearly 36 p.c. and Quebec 39 p.c. of the $20,749,702,486 advance.

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* St. John's, Nfld., was included in the 1960 figure but not in the 1938 data. Excluding this centre in 1960 the ranking would be the same as above, except that Quebec would precede the Atlantic Provinces.

Value of cheques cashed in 24 of the 35 centres was higher in 1960 than in 1959. Payments in the two leading centres reached all-time highs, Toronto advancing by 7.8 p.c. and Montreal 13.7 p.c. In the same comparison, Winnipeg rose 11.3 p.c. and Vancouver 3.0 p.c.

17.—Cheques Cashed at 35 Clearing-House Centres, 1956-60

NOTE.—Figures for earlier years will be found in the corresponding table of previous Year Books.

Clearing-House Centre	1956	1957	1958	1959	1960
	$	$	$	$	$
Atlantic Provinces	**4,136,063,557**	**4,253,883,344**	**4,438,573,264**	**5,119,612,200**	**5,499,101,005**
Halifax	1,900,368,542	1,862,262,193	1,952,996,188	2,240,973,028	2,470,454,380
Moncton	616,097,610	610,987,505	644,872,678	687,497,067	703,299,598
Saint John	824,915,065	974,094,965	974,038,472	1,240,454,340	1,292,907,341
St. John's	794,682,340	806,538,681	866,665,926	950,687,765	1,032,439,686
Quebec	**57,635,780,762**	**60,153,465,596**	**63,318,151,553**	**70,466,037,915**	**80,114,229,557**
Montreal	52,524,281,929	54,937,929,994	57,779,113,688	64,370,686,944	73,203,831,697
Quebec	4,575,848,864	4,675,308,837	4,994,969,283	5,515,387,714	6,285,280,942
Sherbrooke	535,649,969	540,226,765	544,068,582	579,963,257	625,116,918
Ontario	**84,580,096,136**	**92,469,365,362**	**102,798,608,161**	**117,852,356,473**	**125,319,945,444**
Brantford	596,455,633	587,964,512	611,025,605	692,884,865	688,254,488
Chatham	448,947,214	552,228,607	639,882,625	618,777,720	655,466,797
Cornwall	387,278,729	405,239,116	400,904,549	430,320,030	406,526,266
Fort William	410,549,615	455,892,329	458,694,532	483,013,614	454,425,521
Hamilton	4,179,292,551	4,355,968,082	4,681,253,378	5,784,746,402	5,730,222,834
Kingston	464,435,514	449,613,360	499,922,445	530,387,658	520,400,930
Kitchener	940,310,341	978,856,453	1,050,153,291	1,212,701,100	1,268,457,770
London	2,279,949,005	2,489,582,356	2,756,333,193	3,248,220,989	3,438,474,574
Ottawa	3,567,496,334[1]	3,823,157,651[1]	4,823,536,910[1]	5,441,744,284[1]	5,428,617,602[1]
Peterborough	515,640,907	533,262,032	534,560,585	597,132,827	588,320,062
St. Catharines	780,623,214	795,132,217	800,628,561	847,322,290	861,904.935
Sarnia	552,812,970	571,839,628	589,935,036	610,219,199	631,965,512
Sudbury	580,450,567	641,458,123	613,036,685	646,385,049	650,351,629
Toronto	66,301,163,713	73,497,632,863	82,217,905,492	94,286,068,937	101,652,498,680
Windsor	2,574,689,829	2,331,538,033	2,120,835,274	2,422,431,509	2,344,057,844
Prairie Provinces	**30,706,483,084**	**32,060,426,593**	**34,490,157,168**	**37,804,427,925**	**40,667,168,000**
Brandon	217,917,059	222,033,280	229,039,246	247,763,532	255,006,652
Calgary	7,280,076,762	8,319,489,021	7,646,109,483	8,528,838,392	8,773,941,066
Edmonton	4,728,775,559	4,876,156,389	5,149,338,883	5,823,945,694	5,975,975,061
Lethbridge	401,410,718	421,533,161	441,664,205	498,786,593	488,952,852
Medicine Hat	176,626,478	193,144,298	201,480,020	226,497,863	225,389,775
Moose Jaw	324,438,043	340,909,600	392,210,021	394,039,743	407,834,940
Prince Albert	165,300,168	185,407,182	204,350,582	229,736,134	235,303,882
Regina	2,885,106,529	3,233,572,111	3,622,192,049	3,859,211,167	4,377,349,386
Saskatoon	773,856,439	849,665,271	971,923,570	1,085,022,733	1,101,592,417
Winnipeg	13,752,975,329	13,418,516,280	15,631,849,109	16,910,586,074	18,825,821,969
British Columbia	**15,231,472,672**	**16,621,305,755**	**16,244,463,967**	**17,626,917,019**	**18,018,609,012**
New Westminster	716,803,680	742,204,569	824,007,009	925,926,380	863,875,740
Vancouver	12,579,751,243	13,523,017,398	13,143,565,802	14,230,064,376	14,653,833,429
Victoria	1,934,917,749	2,356,083,788	2,276,891,156	2,470,926,263	2,500,899,843
Totals	**192,289,896,211**	**205,558,446,650**	**221,289,954,113**	**248,869,351,532**	**269,619,054,018**

[1] Includes some debits reported in preceding years.

Subsection 2.—Government and Other Banking Institutions

There are three distinct types of savings banks in Canada in addition to the savings departments of the chartered banks and of trust and loan companies: (1) the Post Office Savings Bank, in which deposits are a direct obligation of the Government of Canada; (2) Provincial Government savings banking institutions in Newfoundland, Ontario and Alberta, where the depositor becomes a direct creditor of the province; and (3) two important savings banks in the Province of Quebec—the Montreal City and District Savings Bank and La Banque d'Économie de Québec—established under federal legislation and reporting monthly to the federal Department of Finance. In addition, co-operative credit unions encourage savings among low-income classes and extend small loans to their members.

Post Office Savings Bank.—The Post Office Savings Bank was established under the Post Office Act of 1867 (SC 1867, c. 10) to "enlarge the facilities now available for the deposit of small savings, to make the Post Office available for that purpose, and to give the direct security of the nation to every depositor for repayment of all money deposited by him together with the interest due thereon". Branches of the Government of Canada's Savings Bank under the Department of Finance were gradually amalgamated with this Bank over a period of 50 years and the amalgamation was completed in March 1929. Summary financial statistics for the years ended Mar. 31, 1958-61, follow. Figures back to 1868 are available in previous editions of the Year Book.

Item	*1958*	*1959*	*1960*	*1961*
	$	$	$	$
Deposits and interest	9,949,749	9,432,621	8,010,334	6,898.062
Deposits	*9,097,664*	*8,611,890*	*7,235,391*	*6,199,420*
Interest on deposits	*852,085*	*820,731*	*774,943*	*698,642*
Withdrawals	10,972,519	10,172,956	12,793,511	7,757,737
Balance on deposit	34,895,729	34,155,617	29,372,461	28,512,786

Provincial Government Savings Banks.—Institutions for the deposit of savings are operated by the Provincial Governments of Newfoundland, Ontario and Alberta.

Newfoundland.—The Newfoundland Savings Bank was established in 1834 and the following is a summary financial statement for the years ended Mar. 31, 1958-61.

Item	*1958*	*1959*	*1960*	*1961*
	$	$	$	$
Interest on investments, etc	951,295	974,296	1,066,382	1,066,724
Net rental income	3,611	2,585	2,949	700
Other income	—	—	1,268	1,400
Profit or loss on sale of investments	−86,680	−116,181	−185,000	−164,373
Less interest on deposits	758,257	766,786	773,932	782,699
Less expenses	65,597	74,009	77,966	93,454
Less transfer to reserves	31,137	6,307	6,366	6,436
Net Income	13,235	13,598	27,335	21,862

The number of accounts decreased from 34,791 at Mar. 31, 1960 to 34,176 at the same date of 1961; deposits on the other hand, were slightly higher in 1961 at $27,851,715 compared with $27,545,371 a year earlier. The interest rate payable on deposits of private individuals, trust funds and estates is 3 p.c. per annum and on deposits of corporations 1¾ p.c. per annum.

Ontario.—The establishment of the Province of Ontario Savings Office was authorized by the Ontario Legislature at the 1921 Session and the first branches were opened in March 1922. Interest at the rate of 2¼ p.c. and 2¾ p.c. per annum, compounded half-yearly, is paid on accounts, and deposits are repayable on demand. Total deposits at Mar. 31, 1961 were $77,000,000 and the number of depositors was approximately 95,000. Twenty-one branches were in operation throughout the province.

Alberta.—Savings deposits are accepted at 51 Provincial Treasury Branches throughout Alberta. The total of these deposits at Mar. 31, 1960 was $29,510,171, payable on demand and bearing interest at 2¾ p.c. per annum. Authority has been given for the issue by the Provincial Treasury of savings certificates after Jan. 1, 1960 on the following basis: demand certificates bearing interest at 2¾ p.c. in denominations of $10, $25, $50, $100, $500, $1,000 and up; 5½-year certificates bearing interest at 4½ p.c. in denominations of $25, $50, $100, $500, $1,000 and up.

Quebec Savings Banks.—The Montreal City and District Savings Bank, founded in 1846 and now operating under a charter of 1871 had, at Mar. 31, 1961, a paid-up capital and reserve of $10,000,000, savings deposits of $252,153,230 and total liabilities of $263,076,841. Total assets amounted to $263,076,841, including $154,001,507 of federal, provincial, municipal and other securities. La Banque d'Économie de Québec, founded in 1848 (as La Caisse d'Économie de Notre-Dame de Québec) under the auspices of the St. Vincent de Paul Society, incorporated by Act of the Canadian Legislature in 1855 and given a federal charter by SC 1871, c. 7, had, at Mar. 31, 1961, savings deposits of $44,182,138 and a paid-up capital and reserve of $3,000,000. Liabilities amounted to $54,625,133 and total assets to a like amount.

The following statement shows the combined savings deposits in the Montreal City and District Savings Bank and La Banque d'Économie de Québec for the years ended Mar. 31, 1952-61. Figures back to 1868 are available in previous editions of the Year Book.

Year	*Deposits*
	$
1952	200,342,385
1953	214,122,001
1954	219,372,081
1955	237,816,198
1956	256,526,482
1957	255,000,311
1958	266,585,424
1959	279,626,478
1960	272,614,366
1961	296,335,368

Credit Unions.—Credit unions are incorporated under provincial law to enable groups of people with a common bond of association to pool their savings. The bond of association may be membership in a parish, club, lodge or labour union, that of employment in a plant, industry or department, or that of residence in a rural or a well-defined urban community. The figures of Table **18** show the growing importance of credit unions as savings and loan institutions in Canada. During the ten years 1950-59 the number of credit unions chartered increased by 54 p.c., the number of members in reporting organizations by 127 p.c. and the assets of reporting organizations by 271 p.c., the latter passing the billion-dollar-mark for the first time in 1958.

Quebec holds the lead in the Canadian credit union movement, having almost half of the total membership of all credit unions across the country. Ontario has the largest number of credit unions chartered but total membership and assets in that province are much lower than in Quebec. All provinces except Prince Edward Island shared in the increase in membership reported for 1959.

About 37 p.c. of the credit unions in Canada are rural, although there is some variation as to type in different areas of the country. In the Atlantic Provinces, Quebec and Saskatchewan the credit unions are predominantly rural. In Ontario the occupational type of union accounted for 63 p.c. of the total in 1959 and occupational credit unions also lead in Alberta and British Columbia. In Manitoba, rural and occupational types are about equal. Recently the greatest gain has been shown in the occupational group.

Loans are granted to members for provident and productive purposes from the accumulated pooled savings and are mostly secured by personal notes. Loans to members in 1959 amounted to $470,000,000, at interest rates of 1 p.c. per month or less on the unpaid balance. Savings, which include shares and deposits, reached a total of $1,056,000,000. There were 27 central credit unions in 1959 having the main purpose of acting as credit unions for credit unions, namely, to receive deposits from and make loans to individual credit unions. These centrals are incorporated under provincial legislation to facilitate the flow of funds to credit unions that cannot meet the demand for local loans. Some of these central credit unions admit co-operative associations to membership but most of them limit their membership to credit unions.

The Canadian Co-operative Society serves as a central credit union for provincial centrals and co-operatives all across Canada.

18.—Credit Unions in Canada, 1950-59

Year	Credit Unions Chartered	Credit Unions Reporting	Members[1]	Assets[1]
	No.	No.	No.	$
1950	2,965	2,801	1,036,175	311,532,143
1951	3,121	2,952	1,137,931	358,646,767
1952	3,335	3,080	1,260,435	424,400,375
1953	3,606	3,413	1,434,270	489,266.090
1954	3,920	3,690	1,560,715	552,362,571
1955	4,100	3,899	1,731,328	652,553,665
1956	4,253	3,973	1,870,227	761,255,685
1957	4,389	4,044	2,059,835	852,219,000
1958[r]	4,485	4,156	2,187,494	1,009,363,000
1959	4,566	4,137	2,347,317	1,154,645,000

[1] Reporting organizations only.

19.—Summary Statistics of Credit Unions, by Province, 1959

Province	Credit Unions Chartered	Credit Unions Reporting	Members[1]	Assets[1]	Shares[1]	Deposits[1]	Loans to Members during Year[1]	Total Loans since Inception[1]
	No.	No.	No.	$'000	$'000	$'000	$'000	$'000
Newfoundland	68	51	3,271	408	347	14	306	4,235
P. E. Island	58	44	9,453	1,567	1,268	101	883	9,859
Nova Scotia	221	208	59,933	14,112	12,538	301	10,143	77,415
New Brunswick	162	159	79,766	15,079	13,537	189	7,169	64,641
Quebec—								
Desjardins	1,208	1,202	1,137,065	628,454	40,585	552,131	143,987	1,313,687
Que. League	219	190	65,900	23,655	16,227	5,200	12,000	71,180
Montreal Fed'n	20	20	51,613	44,592	3,020	38,628	10,698	73,970
Ontario	1,516	1,222	481,377	194,068	133,593	32,450	138,166	695,801
Manitoba	229	226	83,419	34,915	25,615	5,024	26,180	137,696
Saskatchewan	276	267	117,777	71,681	53,536	10,549	37,596	216,036
Alberta	262	247	71,106	24,170	20,606	1,042	17,720	102,955
British Columbia	327	301	186,637	101,944	78,216	11,470	64,709	314,279
Totals	**4,566**	**4,137**	**2,347,317**	**1,154,645**	**399,088**	**657,099**	**469,557**	**3,081,754**

[1] Reporting organizations only.

Section 4.—Foreign Exchange

The dollar, established officially as the currency of the united provinces of Canada on Jan. 1, 1858, and extended to cover the New Dominion by the Uniform Currency Act of 1870, was defined as 15/73 of the British gold sovereign.* That is, the par rate of exchange between the dollar and the pound sterling was fixed at $4.866, making the Canadian currency the equivalent of the United States dollar at parity. With minor variations between the import and export gold points representing the cost of shipping gold in either direction, the value of the pound sterling in Canada remained at this level until the outbreak of World War I. The United States dollar, on the other hand, was at a discount in terms of Canadian funds for the first eleven years after Confederation since it was not redeemable in gold from February 1862 to January 1879. On the basis of gold equivalents it would appear that the greatest monthly average discount on the United States dollar after Confederation was approximately 31 p.c., reached in August 1868. From 1879 to 1914 the dollars of the two countries remained at par, varying only within the gold points or under $2 per thousand.

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* The gold sovereign remained the standard for the Canadian dollar until 1910 when the currency was defined in terms of fine gold, making it the exact gold equivalent of the United States dollar. Both British and United States gold coins were, however, legal tender in Canada for this whole period.

On the outbreak of World War I, Canada and the United Kingdom suspended the gold standard. For some weeks both the pound and the Canadian dollar rose to a premium in New York. Subsequently both fell back with the pound going to a slight discount. In January 1916 the pound was officially pegged at $4.76 in American funds. This level was maintained with the help of funds realized by sales of United States securities owned by residents of the United Kingdom, by borrowing in the United States and, after the American entry into the War, by the United States Government financing Allied purchases in that country.

From 1915 to the end of 1917 fluctuations in the rate of exchange between the Canadian and United States dollars did not exceed 2 p.c. on either side of parity; the pound was stable in terms of United States dollars during this period. In 1918 the Canadian dollar began to weaken. After the pound was unpegged in 1919 the Canadian dollar declined further and in 1920 it fell to 82 cents in New York with sterling going as low as $3.18.

By the latter half of 1922 the Canadian dollar had returned practically to par in New York. Despite some further weakness in sterling, the dollar remained close to that level during the next two years, averaging 98.04 and 98.73 cents in terms of the United States dollar in 1923 and 1924, respectively, and fluctuating between a discount of about 3.6 cents and a premium of approximately 0.4 cents. After the United Kingdom resumed gold payments in April 1925, the range of fluctuation of the Canadian dollar narrowed further. From Canada's return to the gold standard in the period July 1, 1926 to January 1929, the exchange rate remained within the gold points. The Canadian dollar then went to a slight discount in New York. With the exception of the period July to November 1930, when it went to a small premium in New York, the dollar remained below parity until the United Kingdom abandoned the gold standard in September 1931. After that month the pound sterling depreciated sharply and the Canadian dollar followed, reaching lows* in New York of 80.5 cents in December 1931 and 82.6 cents in April 1933.

Following the prohibition of gold exports in the latter month by the United States, the pound and the Canadian dollar strengthened rapidly in terms of American funds. By November 1933, both currencies had reached a premium in New York. Meanwhile in a series of steps beginning with permitting the export of newly mined gold in August 1933, the United States moved toward resumption of the gold standard. As of Feb. 1, 1934, the United States Treasury undertook to buy all gold offered at $35 per ounce. After that the exchange rate between the Canadian and United States dollars stabilized. Until the outbreak of war in 1939 much of the trading was conducted within one cent of parity although the Canadian dollar in New York did go as high as 103.6 cents (September 1934) and as low as 98.0 cents (September 1938).*

On the outbreak of World War II in September 1939, the United Kingdom and other sterling countries introduced foreign exchange control involving fixed buying and selling rates of $4.02½ and $4.03½, respectively, in terms of the U.S. dollar. The Canadian dollar in New York declined until Sept. 16, 1939, when the Government instituted foreign exchange control† in Canada and established fixed buying and selling rates of $1.10 to $1.11 for the U.S. dollar and $4.43 to $4.47 for sterling. As compared with previous months, the depreciation of the Canadian dollar in terms of United States funds was approximately half as great as that of the pound sterling.

Apart from a minor adjustment on Oct. 15, 1945, when selling rates for U.S. dollars and sterling were lowered to $1.10½ and $4.45, respectively, the official rates for the Canadian dollar remained unchanged until July 5, 1946. At that time the rate on the U.S. dollar was restored to par, with buying and selling rates for that currency of $1.00 to $1.00½ and for sterling $4.02 to $4.04. These rates continued in effect until Sept. 19, 1949 when, following a 30.5-p.c. reduction by the United Kingdom in the value of sterling to \$2.80 U.S. (an action which was paralleled in varying degrees by numerous other currencies), Canada returned to the former official rates of \$1.10 and \$1.10½ for United States funds. Sterling was quoted at \$3.07¼ and \$3.08¾ on the basis of the New York cross rate.

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* Noon quotations. Daily highs and lows may have exceeded these rates.

† The operations of the Foreign Exchange Control Board from the time of its establishment to the termination of exchange control in December 1951 are reviewed in previous editions of the Year Book.

On Sept. 30, 1950, the Minister of Finance announced that official fixed foreign exchange rates which had been in effect at varying levels since 1939 would be withdrawn effective Oct. 2. Since then the rate has been determined within the market for foreign exchange.

Until Dec. 14, 1951, this policy was carried out within the framework of exchange control. On that date the Foreign Exchange Control regulations were revoked by the Governor in Council and new regulations were passed which exempted all persons and transactions from the various requirements of the Foreign Exchange Control Act. These actions terminated exchange control in Canada and the Foreign Exchange Control Act was repealed in 1952.

The movements of the U.S. dollar in Canadian funds from January 1953 to mid-1961 are shown in Table **20**.

20.—Price of the United States Dollar in Canada, by Month, 1953-61

NOTE.—Rates published by Bank of Canada. Noon average market rate for business days in period.

(Canadian cents per U.S. dollar)

Month	1953	1954	1955	1956	1957	1958	1959	1960	1961
January	97.05	97.29	96.60	99.87	96.07	98.47	96.69	95.31	99.29
February	97.73	96.65	97.69	99.91	95.83	98.10	97.49	95.17	98.96
March	98.33	97.08	98.43	99.87	95.61	97.73	96.98	95.09	98.73
April	98.37	98.25	98.62	99.68	95.97	97.06	96.35	96.29	98.89
May	99.41	98.43	98.59	99.18	95.56	96.69	96.29	97.81	98.75
June	99.44	98.13	98.44	98.53	95.32	96.18	95.88	98.23	100.55
July	99.18	97.44	98.46	98.18	95.09	96.00	95.74	97.84	103.41
August	98.83	97.02	98.51	98.12	94.80	96.46	95.44	96.98	103.15
September	98.43	96.97	98.78	97.77	95.92	97.68	95.16	97.25	..
October	98.25	96.98	99.53	97.32	96.47	97.07	94.77	97.85	..
November	97.77	96.92	99.94	96.44	96.24	96.83	95.03	97.67	..
December	97.31	96.80	99.95	96.05	97.74	96.46	95.12	98.24	..
Annual Average	**98.34**	**97.32**	**98.63**	**98.41**	**95.88**	**97.06**	**95.90**	**96.97**	..

21.—Canada's Official Holdings of Gold and United States Dollars, as at Dec. 31, 1943-60

NOTE.—Holdings comprise gold, U.S. dollars and short-term securities of the U.S. Government held by the Exchange Fund Account, other government accounts and net holdings of the Bank of Canada.

(Millions of U.S. dollars)

Year	Gold	U.S. Dollars	Total	Year	Gold	U.S. Dollars	Total
1943	224.4	425.2	649.6	1952	885.0	975.2	1,860.2
1944	293.9	608.3	902.2	1953	986.1	832.4	1,818.5
1945	353.9	1,154.1	1,508.0	1954	1,072.7	869.9	1,942.6
1946	536.0	708.9	1,244.9	1955	1,133.9	766.9	1,900.8
1947	286.6	215.1	501.7	1956	1,103.3	832.9	1,936.2
1948	401.3	596.5	997.8	1957	1,100.3	728.0	1,828.3
1949	486.4	630.7[1]	1,117.1[1]	1958	1,078.1	861.0	1,939.1
1950	580.0	1,161.5	1,741.5	1959	959.6[2]	909.6	1,869.2[2]
1951	841.7	936.9	1,778.6	1960	885.3	943.9	1,829.2

[1] Does not include \$18,200,000 in U.S. funds borrowed in the U.S. in August 1949 by the Government of Canada and set aside for the purpose of retiring an equal amount of certain securities payable in U.S. dollars on Feb. 1, 1950.

[2] On Oct. 1, 1959, \$62,500,000 representing the gold portion of Canada's increased quota was transferred to the International Monetary Fund .

PART II.—MISCELLANEOUS COMMERCIAL FINANCE

Section 1.—Loan and Trust Companies*

Canadian loan and trust companies, registered with either the federal or provincial governments, operate under the Loan and Trust Companies Acts (RSC 1952, cc. 170 and 272) and corresponding provincial legislation.† Although statistics of provincially registered companies are not collected in detail, it is estimated that more than 95 p.c. of the business of such companies is represented in the figures of this Section, so that they may be accepted as fairly inclusive and representative of the volume of business transacted.

The principal function of loan companies is the lending of funds on first-mortgage security, the money thus made available for development purposes being secured mainly by the sale of debentures to the investing public and by savings department deposits. The extent of investments in mortgages by federal and provincial loan companies may be gauged by the following figures: total assets of such companies for the years 1958 and 1959 amounted to $605,373,501 and $671,508,632, respectively, which amounts include mortgage loans of $456,689,853 and $509,669,369, respectively; thus, the resulting percentages of mortgages to total assets for those years were approximately 75 p.c.

Trust companies act as executors, trustees and administrators under wills or by appointment, as trustees under marriage or other settlements, as agents in the management of the estates of the living, as guardians of minor or incapable persons, as financial agents for municipalities and companies, as transfer agents and registrars for stocks and bond issues, as trustees for bond issues and, where so appointed, as authorized trustees in bankruptcy. Such companies receive deposits for investment but the investing and lending of such deposits and of actual trust funds are restricted by law. The assets of trust companies (not including estates, trust and agency funds, which cannot be regarded as assets in the same sense as company and guaranteed funds) increased from $154,202,165 in 1928 to $1,079,254,305 in 1959. In the former year the total of estates, trust and agency funds administered amounted to $1,077,953,643 and in 1959 to $6,902,512,833.

A summary of operations of provincial and federal loan and trust companies is given in Table 1. As a result of the nature of the operations of the latter companies, which are intimately connected with the matter of probate, the larger trust companies usually choose to operate under provincial charters. The statistics of Tables **2**, **3** and **4** refer to those companies incorporated both by the Government of Canada and by the provinces. Included in the statistics of federal companies are data of loan and trust companies incorporated by Nova Scotia and brought by the laws of that province under the examination of the federal Department of Insurance, as well as data for trust companies in New Brunswick and Manitoba.

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* Revised under the direction of the Superintendent of Insurance for Canada, Ottawa.

† An outline of the development of loan and trust companies in Canada from 1844 to 1913 is given in the 1934-35 Year Book, p. 993. The federal laws relating to their operation were revised in 1914.

1.—Operations of Provincial and Federal Loan and Trust Companies, as at Dec. 31, 1958 and 1959

Item	1958			1959		
	Provincial Companies	Federal Companies	Total	Provincial Companies	Federal Companies	Total
	$	$	$	$	$	$
Loan Companies—						
Assets (book values)	246,637,900	358,735,601	605,373,501	262,715,544	408,793,088	671,508,632
Liabilities to the public	178,348,999	314,971,124	493,320,123	192,440,925	363,686,767	556,127,692
Capital paid up	20,085,710	18,726,524	38,812,234	20,902,070	18,675,472	39,577,542
Reserve and contingency funds	39,933,681	24,020,837	63,954,518	41,683,880	25,605,974	67,289,854
Surplus	8,269,510	1,017,116	9,286,626	7,688,669	824,875	8,513,544
Total liabilities to shareholders	68,288,901	43,764,477	112,053,378	70,274,619	45,106,321	115,380,940
Gross profits realized during year[1]	5,314,364	5,895,086	11,209,450	5,667,238	6,430,605	12,097,843

[1] Profits before income taxes.

1.—Operations of Provincial and Federal Loan and Trust Companies, as at Dec. 31, 1958 and 1959—concluded

Item	1958			1959		
	Provincial Companies	Federal Companies	Total	Provincial Companies	Federal Companies	Total
	$	$	$	$	$	$
Trust Companies—						
Assets (book values)—						
Company funds	106,914,805	36,551,294	143,466,099	117,135,913	39,702,594	156,838,507
Guaranteed funds	588,188,712	238,743,359	826,932,071	660,663,751	261,752,047	922,415,798
Totals, Assets	695,103,517	275,294,653	970,398,170	777,799,664	301,454,641	1,079,254,305
Estates, trust, and agency funds	*5,328,920,074*	*990,078,160*	*6,318,998,234*	*5,774,745,226*	*1,127,767,607*	*6,902,512,833*
Capital paid up	31,734,725	16,565,308	48,300,033	31,847,000	17,072,542	48,919,542
Reserve and contingency funds	44,356,427	16,385,119	60,741,546	53,707,938	18,832,621	72,540,559
Surplus	8,906,239	1,637,580	10,543,819	9,407,808	1,286,231	10,694,039
Gross profits realized during year[1]	10,023,283	4,241,979	14,265,262	10,621,319	4,654,575	15,275,894

[1] Profits before income taxes.

2.—Assets and Liabilities of Loan Companies, 1955-59

Item	CHARTERED BY GOVERNMENT OF CANADA[1]				
	1955	1956	1957	1958	1959
	$	$	$	$	$
Assets					
Real estate[2]	5,699,194	7,196,820	8,176,745	8,503,266	9,568,209
Mortgage loans and agreements of sale	200,118,391	227,370,747	245,459,582	269,539,879	312,248,782
Collateral loans	155,562	180,793	249,551	238,477	1,654,320
Bonds and debentures	50,187,515	36,623,327	39,190,957	51,544,496	50,748,166
Stocks	14,058,759	16,246,819	15,907,174	17,894,334	18,437,649
Cash	8,781,617	7,015,991	8,578,259	7,382,089	11,596,706
Totals, Assets[3]	**281,004,269**	**296,715,805**	**320,144,380**	**358,735,601**	**408,793,088**
Liabilities					
Liabilities to Shareholders—					
Capital paid up	16,545,334	17,622,027	17,695,087	18,726,524	18,675,472
Reserves	17,458,300	19,271,324	20,527,887	24,020,837	25,605,974
Totals, Liabilities to Shareholders[4]	35,076,130	38,071,506	39,430,170	43,764,477	45,106,321
Liabilities to the Public—					
Debentures	130,264,215	146,839,303	169,507,160	183,237,073	242,286,755
Deposits	111,557,968	106,671,012	105,761,097	124,444,060	112,227,274
Totals, Liabilities to the Public[5]	245,606,324	258,245,799	280,238,094	314,971,124	363,686,767
Totals, Liabilities	**280,682,454**	**296,317,305**	**319,668,264**	**358,735,601**	**408,793,088**

For footnotes, see end of table.

2.—Assets and Liabilities of Loan Companies, 1955-59—concluded

Item	Chartered by Provinces[6]				
	1955	1956	1957[7]	1958	1959
	$	$	$	$	$
Assets					
Real estate[2]	856,504	986,728	3,438,381	3,086,620	2,593,080
Mortgage loans and agreements of sale	96,347,710	104,062,678	175,175,917	187,149,974	197,420,587
Collateral loans	1,035,965	1,194,450	3,381,018	2,938,213	2,892,144
Bonds and debentures	23,017,586	26,377,850	26,409,535	34,005,594	33,936,518
Stocks	2,782,701	3,176,295	6,700,522	7,707,552	11,128,378
Cash	4,261,283	3,837,228	8,723,799	6,549,746	7,685,644
Totals, Assets[3]	**129,589,371**	**140,453,366**	**228,927,416**	**246,637,900**	**262,715,544**
Liabilities					
Liabilities to Shareholders—					
Capital paid up	9,890,439	10,929,428	21,395,380	20,085,710	20,902,070
Reserves	16,694,396	18,149,014	38,896,098	39,933,681	41,683,880
Totals, Liabilities to Shareholders[4]	31,671,971	34,876,071	68,498,059	68,288,901	70,274,619
Liabilities to the Public—					
Debentures	28,696,549	30,139,135	73,586,634	81,935,674	87,454,173
Deposits	67,587,267	73,543,730	82,434,034	91,774,807	98,592,261
Totals, Liabilities to the Public[5]	97,917,400	105,577,295	160,429,357	178,348,999	192,440,925
Totals, Liabilities	**129,589,371**	**140,453,366**	**228,927,416**	**246,637,900**	**262,715,544**

[1] Includes companies chartered by the Government of Nova Scotia which, by arrangement, are inspected by the federal Department of Insurance. [2] Book value of real estate for company use and other real estate. [3] Includes interest due and accrued and other assets. [4] Includes surplus. [5] Includes other liabilities to the public. [6] Exclusive of Nova Scotia. [7] Includes, for the first time, one loan company incorporated under the laws of Quebec.

3.—Assets and Liabilities of Trust Companies, 1955-59

Item	Chartered by Government of Canada[1]				
	1955	1956	1957	1958	1959
	$	$	$	$	$
Assets					
Company Funds[2],[3]	**32,090,504**	**36,690,878**	**38,843,072**	**36,551,294**	**39,702,594**
Real estate[4]	2,446,182	2,856,671	2,988,961	3,500,377	3,496,168
Mortgage loans and agreements of sale	6,947,633	9,399,887	9,514,144	8,678,270	8,609,888
Collateral loans	593,086	507,486	404,577	293,660	324,523
Bonds and debentures	12,538,063	14,467,349	15,743,144	14,235,122	16,567,028
Stocks	5,314,098	5,500,185	5,881,192	5,765,935	6,542,623
Cash	3,136,361	2,506,028	2,876,263	3,155,689	2,903,129
Guaranteed Funds[2],[3]	**159,235,891**	**170,344,746**	**176,964,312**	**238,743,359**	**261,752,047**
Mortgage loans and agreements of sale	78,009,884	90,669,596	95,833,151	122,379,881	147,003,172
Collateral loans	4,875,283	6,610,998	4,729,770	7,180,379	6,786,105
Bonds and debentures	68,265,804	60,310,896	66,029,880	99,188,148	96,526,399
Stocks	2,127,899	1,561,694	1,539,685	1,650,340	1,524,926
Cash	4,592,425	9,731,317	7,234,502	6,058,157	7,158,607
Liabilities					
Company Funds[5]	**31,905,971**	**36,381,834**	**38,583,249**	**36,551,294**	**39,702,594**
Capital paid up	15,407,916	17,327,010	18,332,563	16,565,308	17,072,542
Reserves	12,267,502	11,911,366	13,099,813	16,385,119	18,832,621
Guaranteed Funds—Trust Deposits and Certificates	**159,235,891**	**170,344,746**	**176,964,312**	**238,743,359**	**261,752,047**

For footnotes, see end of table, p. 1136.

3.—Assets and Liabilities of Trust Companies, 1955-59—concluded

Item	Chartered by Provinces[6]				
	1955	1956	1957	1958	1959
	$	$	$	$	$
Assets					
Company Funds[2],[3]	**88,360,564**	**91,554,381**	**97,258,395**	**106,914,805**	**117,135,913**
Real estate[4]	8,411,623	8,763,967	11,735,804	15,173,335	16,810,602
Mortgage loans and agreements of sale	14,060,244	12,812,273	10,330,834	9,770,939	9,674,177
Collateral loans	9,131,608	11,217,620	12,145,388	12,896,627	14,546.216
Bonds and debentures	25,481,913	24,123,965	25,342,514	24,235,427	24,584,011
Stocks	22,151,675	24,905,523	29,161,353	31,922,199	37,574,200
Cash	4,760,662	4,662,121	3,222,485	6,673,663	6,928,724
Guaranteed Funds[2]	**437,168,231**	**446,448,674**	**472,678,645**	**588,188,712**	**660,663,751**
Mortgage loans and agreements of sale	128,630,198	155,096,475	159,294,108	202,195,999	243,457,590
Collateral loans	24,700,574	19,823,245	29,845,537	41,652,942	38,379,063
Bonds and debentures	252,047,774	238,455,688	253,111,774	301,913,159	325,946,836
Stocks	1,286,070	2,212,005	1,911,365	2,597,947	2,846,691
Cash	28,110,462	28,037,961	25,235,015	36,316,995	45,666,001
Liabilities					
Company Funds[5]	**88,360.564**	**91,554,381**	**97,258,395**	**106,914,805**	**117,135,913**
Capital paid up	30,932,370	30,901,805	31,600,360	31,724,725	31,847,000
Reserves	35,496,257	36,661,034	39,320,428	44,356,427	53,707,938
Guaranteed Funds—Trust Deposits and Certificates	**437,168,231**	**446,448,674**	**472,678,645**	**588,188,712**	**660,663,751**

[1] Includes companies chartered by the Governments of Nova Scotia, New Brunswick and Manitoba, which, by arrangement, are inspected by the federal Department of Insurance. [2] Includes other assets. [3] Includes interest due and accrued. [4] Book value of real estate for company use and other real estate. [5] Includes other company fund liabilities. [6] Chartered by all provinces except Nova Scotia, New Brunswick and Manitoba (see text, p. 1133).

4.—Estates, Trust and Agency Funds of Trust Companies, Chartered by or Supervised by the Federal Government and by Provincial Governments, as at Dec. 31, 1950-59

Year	Federal Companies[1]	Provincial Companies[2]	Total	Year	Federal Companies[1]	Provincial Companies[2]	Total
	$	$	$		$	$	$
1950	494,636,746	3,126,058,749	3,620,695,495	1955	734,670,479	3,985,662,299	4,720,332,778
1951	543,983,754	3,282,558,573	3,826,542,327	1956	815,367,349	4,318,560,879	5,133,928.228
1952	588,550,279	3,383,650,088	3,972,200,367	1957	886,560,559	4,695,817,867	5,582,378,426
1953	631,231,540	3,470,781,614	4,102,013,154	1958	990,078,160	5,328,920,074	6,318,998,234
1954	663,520,956	3,734,874,516	4,398,395,472	1959	1,127,767,607	5,774,745,226	6,902,512,833

[1] Includes companies chartered by the Governments of Nova Scotia, New Brunswick and Manitoba which, by arrangement, are inspected by the federal Department of Insurance. [2] Excludes provincial companies of Nova Scotia, New Brunswick and Manitoba which are included with federal companies.

Section 2.—Licensed Small Loans Companies and Licensed Money-Lenders*

Licensed small loans companies and licensed money-lenders are subject to the provisions of the Small Loans Act (RSC 1952, c. 251) as amended by c. 46 of the Statutes of 1956, an enactment of the Parliament of Canada regulating personal loans not in excess of $1,500 made on the security of promissory notes of borrowers. Most of these notes are additionally secured by endorsements or chattel mortgages. The Act permits, in the case of licensed lenders, maximum rates of cost of loan, including charges of every kind, of 2 p.c. per month on that portion of the unpaid balance of a loan not exceeding $300, 1 p.c. per month on that portion of the balance exceeding $300 but not exceeding $1,000, and one-half of 1 p.c. per month on any remainder of the balance exceeding $1,000. The maximum rate permitted to be charged by an unlicensed lender is 1 p.c. per month. Prior to Jan. 1, 1957, the scope of the Act extended only to loans of $500 and under and the maximum rate permitted to be charged by licensed lenders was 2 p.c. per month and by unlicensed lenders 12 p.c. per annum. The small loans companies—four in number—were incorporated by special Acts of the Parliament of Canada, the first such company commencing business in 1928. Money-lenders, of which there are 77, are made up of companies otherwise incorporated and include a few partnerships and individuals. Table **5** gives the combined financial experience of small loans companies and licensed money-lenders for the years 1956-59.

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* Further details are given in the Department of Insurance report *Small Loans Companies and Money-Lenders* for the year ended Dec. 31, 1959.

5.—Assets and Liabilities of Small Loans Companies and Money-Lenders, 1956-59

Assets and Liabilities	1956	1957[1]	1958[1]	1959[1]
	$	$	$	$
Assets	**262,386,415**	**326,549,959**	**408,581,861**	**489,458,577**
Small loan balances	88,428,203	229,199,629	315,827,669	360,019,949
Balances, large loans and other contracts	160,743,235	86,534,064	81,597,731	117,019,123
Cash	6,308,752	5,287,550	5,334,230	5,422,060
Other	6,906,225	5,528,716	5,822,231	6,997,445
Liabilities	**262,386,415**	**326,549,959**	**408,581,861**	**489,458,577**
Borrowed money	191,697,344	258,184.531	326,274,370	398,296,116
Reserves for losses	5,607,582	6,766,856	8,454.003	9,536,367
Paid-up capital	13,978,275	14,992,722	26,620,278	36,106,703
Surplus paid in by shareholders	12,078,629	12,478,629	9,475,379	377,890
Earned surplus	12,497,185	18,184,528	17,877,114	17,999,186
Other	26,527,400	15,942,693	19,880,717	27,142,315

[1] Commencing Jan. 1, 1957, the Small Loans Act became applicable to loans of $1,500 or under made on and after that date.

The combined companies showed a substantial increase in the amount of business for 1959 as compared with 1958. While the number of small loans made to the public during the year 1959 decreased from 1,107,500 to 1,097,226, or by 1 p.c., the amount of such loans rose from $477,705,515 to $526,682,817, or by 10 p.c. The average small loan made was approximately $480 in 1959 compared with $431 in 1958. At the end of 1959 small loans outstanding numbered 920,747 for an amount of $360,019,949 or an average $391 per loan. These figures compare with 892,111, $315,827,669 and $354, respectively, for 1958.

Gross profit of small loans companies, before income taxes and before taking into account any increase or decrease in reserves for bad debts, increased from $22,400,025 in 1958 ($17,669,262 being the profit on small loans and $4,730,763 the profit on business other than small loans) to $24,767,979 in 1959 ($18,857,377 being the profit on small loans and $5,910,602 the profit on business other than small loans).

Section 3.—Sales of Canadian Bonds*

Previous editions of the Year Book have traced sales of Canadian bonds to the end of 1959. This review continues a record of new issues placed in 1960 with some reference to developments in the first six months of 1961.

Excluding all financing of less than one year, the grand totals of new security issues placed amounted to $4,215,103,238 in 1960 compared with $4,342,890,839 in 1959. When these totals are broken down into various classifications, the following details result: federal and guaranteed financing amounted to $2,627,977,950 in 1960 compared with

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* Prepared by E. C. Gould, Financial Editor, *The Monetary Times.*

$2,896,050,600 in 1959; provincial and guaranteed financing amounted to $616,025,000 in 1960 compared with $653,001,875 in 1959; municipal financing (including parochial and miscellaneous) amounted to $472,214,288 in 1960 compared with $424,813,364 in 1959; corporation financing amounted to $498,886,000 in 1960 compared with $369,025,000 in 1959.

Details follow on various classifications of new bond sales with relevant comment. As with previous calculations, the federal totals have excluded all refunding issues and new financing of less than one year. In this category, treasury bill sales totalled $6,490,000,000 in 1960 and $6,947,944,000 in 1959. If these figures were added to federal financing, totals would be increased to $10,705,103,238 and $11,290,834,839, respectively.

Included in the federal total for 1960 is an amount of $908,977,950 for Series 15, Canada Savings Loan, as reported for subscriptions received to Apr. 30, 1961. This Series is dated Nov. 1, 1960 to mature on Nov. 1, 1970. The first four coupons, due Nov. 1, 1961, 1962, 1963 and 1964, carry rates at 4 p.c., 4¼ p.c., 4½ p.c., and 4¾ p.c., respectively. Remaining coupons, due on Nov. 1 for the next six successive years, carry a rate of 5 p.c. Average yield, if held to maturity, is 4.71 p.c. and limits per individual were reduced to $10,000 from $20,000 for Series 14 of 1959.

The 1960 Series retained familiar features of previous issues, such as a privilege of redemption at full face value, plus accrued interest at any time. An entirely new provision, however, permitted registration in estate names or in the names of trustees under a will or administrators of an estate. Although the rate to maturity was less than a record high in 1959, the relative decrease was considered small when compared with yield changes in other Government of Canada bonds over the same period.

6.—Sales of Canada Savings Loans, 1946-60

NOTE.—Figures for the issues 1946-59 are for the entire loans, i.e., either to the year-end or to the closing date within the year or in the subsequent year. The figure for Series 15 (1960) is to Apr. 30, 1961 and is subject to revision when complete returns are available.

Series	Applications	Limits per Individual	Total Sales
	No.	$	$
Series 1, 1946	1,248,444	2,000	535,285,550
Series 2, 1947	910,742	1,000	287,733,100
Series 3, 1948	862,686	1,000	260,491,150
Series 4, 1949	1,015,579	1,000	320,200,000
Series 5, 1950	963,048	1,000	285,600,000
Series 6, 1951	986,900	5,000	394,642,400
Series 7, 1952	982,274	5,000	380,761,100
Series 8, 1953	1,267,506	5,000	850,548,900
Series 9, 1954	1,175,264	5,000	800,540,900
Series 10, 1955	1,180,000	5,000	729,100,000
Series 11, 1956	1,242,250	5,000	853,810,150
Series 12, 1957	1,293,163	10,000	1,216,711,900
Series 13, 1958	1,179,198	10,000	923,697,450
Series 14, 1959	1,486,794[r]	20,000	1,536,050,600[r]
Series 15, 1960	1,230,686	10,000	908,977,950

Also included in the federal total for 1960 is an amount of $250,000,000 guaranteed by the Federal Government. This amount represents two issues of non-callable bonds on behalf of the Canadian National Railways, both sold in September The first amounted to $175,000,000 at 5 p.c., maturing on Oct. 1, 1987 and the second to $75,000,000 at 4½ p.c., maturing on Apr. 1, 1967.

Provincial financing at $616,025,000 in 1960 combined totals for both direct and provincially guaranteed new sales. Of this total, $250,000,000 was direct and the remaining $366,025,000 represented provincial guarantees for utility, municipal and parochial purposes. Of a comparable total of $653,001,875 in 1959, $277,180,000 represented direct provincial financing and $375,821,875 was of a guaranteed nature.

Direct provincial entries into the bond market during 1960 were made by the provinces of Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland, as follows:—

Province	*Month*	*Amount*
		$
New Brunswick	February	15,000,000
Saskatchewan	February	7,500,000
Manitoba	March	15,000,000
Manitoba	March	5,000,000
Newfoundland	March	6,000,000
Nova Scotia	April	10,000,000
Ontario	April	60,000,000
Manitoba	April	20,000,000
Prince Edward Island	May	4,000,000
Saskatchewan	June	7,500,000
Nova Scotia	June	10,000,000
Quebec	July	50,000,000
Nova Scotia	September	10,000,000
Newfoundland	September	5,000,000
Quebec	October	10,000,000
Manitoba	December	15,000,000
TOTALS		250,000,000

In the field of direct municipal financing (exclusive of municipal issues guaranteed by various provinces), the market for new flotations was up to $472,214,288 in 1960 from $424,813,364 in 1959. Exclusive of loans for parochial and other educational purposes ($85,320,000 in 1960 and $73,804,100 in 1959), these issues amounted to $386,894,288 in 1960 and $351,009,264 in 1959. Among the largest municipal borrowers in 1960 were Vancouver, Regina, Saskatoon, Winnipeg, Toronto, Hamilton, London, Ottawa, Montreal, Quebec City and Halifax.

Over the past few years a fairly stable volume of new bond sales for federal, provincial and municipal financing was recorded but new corporation issues showed a marked decline, principally attributed to a general slow-down of business activity which created considerable concern on the corporation market. In 1960, they totalled $498,886,000 compared with $369,025,000 in 1959, $729,255,000 in 1958 and $1,024,604,100 in 1957.

Although the dollar total of corporation bond sales during 1960 was up somewhat from 1959, the volume was low. But because of their scarcity, new issues were mostly taken up as soon as they came on the market. Largest corporate borrowers were the Bell Telephone Company of Canada, T. Eaton Acceptance Company Limited and British Columbia Electric Company Limited.

Bell Telephone borrowed for sizable amounts in the months of March, June and December of 1960. The first of these issues was for $25,000,000, 6¼ p.c., first-mortgage bonds, maturing on Apr. 1, 1974; the second was for $50,000,000, 5¾ p.c., first-mortgage bonds, maturing on Aug. 2, 1982; and the third was for $35,000,000, 6 p.c., first-mortgage bonds, maturing on Jan. 2, 1986.

Both T. Eaton Acceptance and British Columbia Electric entered the bond market during the month of March. The former issue was for $17,500,000, 6¾ p.c., sinking fund debentures, maturing on Apr. 1, 1980 and the latter was for $30,000,000, 6½ p.c., first-mortgage bonds, maturing on Apr. 1, 1990.

The total of all new Canadian bond sales financed in the United States amounted to $283,169,000 during 1960, down from $472,856,431 in 1959, $486,950,621 in 1958 and $606,876,100 in 1957. Of the 1960 total, $92,000,000 was for direct and guaranteed provincial issues, $110,909,000 was for municipal issues and $80,260,000 for corporation issues. These totals compared with $310,200,000, $112,356,431 and $50,300,000, respectively, in 1959. An additional amount at $13,600,000 (comprised of $9,100,000 provincial and $4,500,000 municipal issues) was sold elsewhere than in Canada or the United States during 1960.

Prices rose and interest rates dropped with few interruptions on the bond market during most of 1960. In September, however, the general situation changed rapidly for a short time after an amount of $250,000,000 was floated for the Canadian National Railways. While this issue had first appearances of a sell-out, concern later developed that it had not been firmly distributed. This concern signalled an over-all drop in prices with some declines by as much as eight points. Toward the end of the year, the situation began to take on a more orderly appearance with a return to higher prices and lower yields. This period lasted until Dec. 20 when the federal Budget imposed a 15-p.c. withholding tax on all new issues purchased by non-residents. As far as market changes were involved, it was felt that two important trends would develop because of the new tax measure: (1) the Canadian market would be called upon to supply a greater percentage of new financing, and (2) there would be an upward pressure on interest rates unless measures were taken to expand money supply.

During the early part of 1961 (based on calculations made up to May 15, 1961), prevailing trends did not conform entirely to these expectations. On the one hand, they did indicate a greatly reduced total of Canadian bond sales in the United States. On the other hand, they gave little indication of an upward pressure on interest rates because of increased financing at home. In general, new federal and provincial sales were somewhat higher while municipal and corporation sales were down.

7.—Sales of Canadian Bonds, by Class of Bond and Country of Sale, 1951-60

(SOURCE: *The Monetary Times*)

NOTE.—Figures from 1904 are given in the corresponding table of previous Year Books beginning with the 1933 edition.

Year	Class of Bond					
	Federal[1]	Provincial	Municipal	Parochial and Miscellaneous	Corporation	Total
	$	$	$	$	$	$
1951	594,642,400	369,532,000	196,438,916	37,967,921	451,630,000	1,650,211,237
1952	830,761,100	426,973,000	147,690,940	49,264,100	573,539,000	2,028,228,140
1953	1,950,548,900	436,616,900	186,784,460	35,242,605	336,295,800	2,945,488,665
1954	3,200,540,900	400,916,000	209,640,778	51,352,886	606,532,800	4,468,983,364
1955	1,348,500,000	434,165,000	226,991,573	66,063,850	585,795,900	2,661,516,323
1956	1,357,000,000	557,888,000	265,936,167	52,661,700	860,184,400	3,093,670,267
1957	2,468,792,850	645,959,500	305,726,988	49,966,700	1,024,604,100	4,495,050,138
1958	2,624,534,050	791,271,000	401,426,925	62,081,000	729,255,000	4,608,567,975
1959	2,896,050,600 r	653,001,875	351,009,264	73,804,100	369,025,000	4,342,890,839 r
1960	2,627,977,950	616,025,000	386,894,288	85,320,000	498,886,000	4,215,103,238

Year	Country of Sale		
	Canada[1]	United States	Total
	$	$	$
1951	1,266,188,237	384,023,000	1,650,211,237
1952	1,743,578,115	284,650,025	2,028,228,140
1953	2,638,889,450	306,599,215	2,945,488,665
1954	4,295,385,364	173,598,000	4,468,983,364
1955	2,506,953,323	154,563,000	2,661,516,323
1956	2,623,137,285	470,532,982	3,093,670,267
1957	3,888,174,038	606,876,100	4,495,050,138
1958	4,121,617,354	486,950,621	4,608,567,975
1959	3,749,149,758	472,856,431	4,222,006,189
1960[2]	3,918,334,238	283,169,000	4,201,503,238

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[1] Excludes treasury bills, deposit certificates and other financing for a term of less than one year and the Canada Conversion Loan of 1958. [2] Total of all financing in Canada and the United States is shown at $13,600,000 less than the grand total of all financing during the year since this amount was raised elsewhere than in either Canada or the United States.

CHAPTER XXIV.—INSURANCE*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Insurance, for the purpose of statistical analysis, is usually classified as life, fire and casualty. Most companies operate under Federal Government registration although some have provincial licences only. Also many fraternal orders and societies are engaged in this kind of business. The special articles relating to insurance that have appeared in previous editions of the Year Book are listed in Part II of Chapter XXVI under the heading "Insurance".

Section 1.—Life Insurance†

Life insurance in force in Canada with companies registered by the Federal Government (exclusive of fraternal benefit societies) amounted to over $40,874,000,000 at the end of 1959, an increase of $4,378,000,000 during the year. The ratio of gain in business in force expressed as a percentage of the amount in force at the beginning of the same year, which had hovered around 10 p.c. each year during the decade ended in 1955, increased to 14.3 p.c. in 1956, fell back to 13.8 p.c. in 1957 and 10.3 p.c. in 1958 and moved upward to 12.0 p.c. in 1959.

Year	*In Force at Beginning of Year*	*Increase in Force for the Year*	*Percentage Gain*
	$	$	
1930	6,157,000,000	335,000,000	5.4
1935	6,221,000,000	38,000,000	0.6
1940	6,776,000,000	200,000,000	2.9
1945	9,140,000,000	612,000,000	6.7
1950	14,409,000,000	1,337,000,000	9.3
1951	15,746,000,000	1,490,000,000	9.5
1952	17,236,000,000	1,855,000,000	10.8
1953	19,091,000,000	2,136,000,000	11.2
1954	21,227,000,000	1,908,000,000	9.0
1955	23,135,000,000	2,317,000,000	10.0
1956	25,452,000,000	3,635,000,000	14.3
1957	29,087,000,000	4,000,000,000	13.8
1958	33,087,000,000	3,409,000,000	10.3
1959	36,496,000,000	4,378,000,000	12.0

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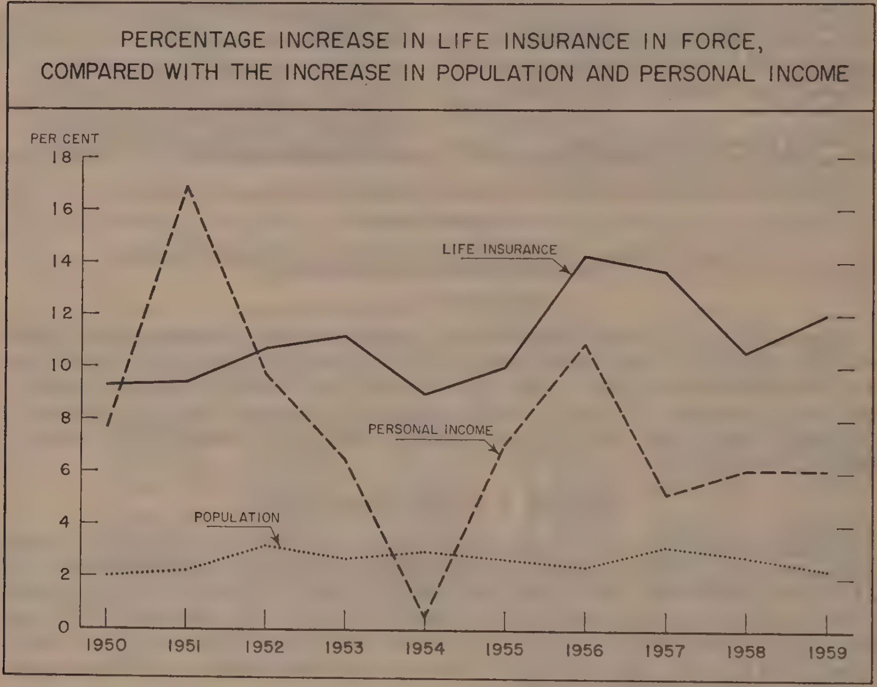
* Material in this Chapter, except as otherwise indicated, has been prepared under the direction of the Superintendent of Insurance for Canada, Ottawa. More detailed data are available in the Annual Reports of the Department of Insurance.

† All the amounts given in the tables of this Section are net amounts after deduction of reinsurance ceded.

Subsection 1.—Summary of Life Insurance in Canada

Tables 1 and 2 summarize insurance premiums, claims, amounts of new policies effected, and amounts of insurance in force on Dec. 31 for the years 1958 and 1959. These data are presented in Table 1 on the basis of the supervising government authorities for the companies and societies concerned, and the same data are presented in Table 2 classified on the basis of nationality of company or society and by supervising government authorities.



1.—Summary of Life Insurance in Canada according to Supervising Government Authority, 1958 and 1959

Business Transacted by—	Insurance Premiums	Claims[1]	New Policies Effected	Insurance in Force, Dec. 31
	$'000	$'000	$'000	$'000
1958				
Federally Registered	**658,172**	**216,368**	**5,217,937**	**37,077,186**
Companies	648,514	211,918	5,129,714	36,495,779
Societies	9,658	4,450	118,222	581,407
Provincially Licensed Only	**41,080**	**13,615**	**456,823**	**2,355,329**
Within Province of Incorporation—				
Companies	31,450	9,453	367,163	1,905,139
Societies	2,711	1,531	16,154	114,520
Outside Province of Incorporation—				
Companies	4,369	1,078	49,177	208,757
Societies	2,550	1,553	24,329	126,912
Totals, 1958	**699,252**	**229,983**	**5,704,760**	**39,432,515**

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[1] Death, disability and maturity under insurance and annuity contracts.

1.—Summary of Life Insurance in Canada according to Supervising Government Authority, 1958 and 1959—concluded

Business Transacted by—	Insurance Premiums	Claims[1]	New Policies Effected	Insurance in Force, Dec. 31
	$'000	$'000	$'000	$'000
1959				
Federally Registered	**708,247**	**227,694**	**5,750,757**	**41,513,067**
Companies	697,741	223,293	5,622,229	40,873,810
Societies	10,506	4,401	128,528	639,257
Provincially Licensed Only	**44,854**	**14,165**	**454,087**	**2,272,885**
Within Province of Incorporation—				
Companies	33,843	9,630	351,261	1,746,499
Societies	3,143	1,927	16,677	143,717
Outside Province of Incorporation—				
Companies	5,416	1,224	66,652	251,425
Societies	2,452	1,384	19,497	131,244
Totals, 1959	**753,101**	**241,859**	**6,204,844**	**43,785,952**

[1] Death, disability and maturity under insurance and annuity contracts.

2.—Summary of Life Insurance in Canada, by Nationality of Company or Society, 1958 and 1959

Business Transacted by—	Insurance Premiums	Claims[1]	New Policies Effected	Insurance in Force, Dec. 31
	$'000	$'000	$'000	$'000
1958				
Canadian Companies—				
Federally registered	432,683	141,248	3,345,151	24,560,264
Provincially licensed only	35,820	10,532	416,340	2,113,896
Canadian Societies—				
Federally registered	4,980	2,544	89,161	375,672
Provincially licensed only	5,260	3,083	40,483	241,432
British Companies—				
Federally registered	24,410	5,127	224,776	1,170,343
Foreign Companies—				
Federally registered	191,420	65,543	1,559,787	10,765,171
Foreign Societies—				
Federally registered	4,678	1,906	29,061	205,735
Totals, 1958	**699,252**	**229,983**	**5,704,760**	**39,432,515**
1959				
Canadian Companies—				
Federally registered	463,605	152,564	3,736,273	27,695,966
Provincially licensed only	39,259	10,854	417,913	1,997,924
Canadian Societies—				
Federally registered	5,361	2,370	97,138	417,741
Provincially licensed only	5,595	3,311	36,174	274,961
British Companies—				
Federally registered	29,554	6,048	224,674	1,332,991
Foreign Companies—				
Federally registered	204,582	64,681	1,661,282	11,844,853
Foreign Societies—				
Federally registered	5,145	2,031	31,390	221,516
Totals, 1959	**753,101**	**241,859**	**6,204,844**	**43,785,952**

[1] Death, disability and maturity under insurance and annuity contracts.

Subsection 2.—Operational Statistics for Life Insurance Transacted in Canada by Companies under Federal Registration

The amount of life insurance in force in Canada has shown an almost continuous advance year by year since the beginning of the record in 1869. The amount per capita of the estimated population has more than doubled since 1950—evidence of the general recognition of the value of life insurance for the adequate protection of dependants against misfortune. At the end of 1959 there were 92 companies federally registered to transact life insurance in Canada, including 34 Canadian companies, 15 British and 43 foreign companies. Six of these companies (two Canadian, one British and three foreign) became registered during the year.

The operations analysed in the tables of this Subsection, with the exception of Table 7, include only those companies under federal registration and are exclusive of fraternal organizations and provincial licensees. However, companies under federal registration account for over 93 p.c. of the life insurance in force in Canada.

3.—Life Insurance Effected and in Force in Canada by Companies under Federal Registration, Decennially 1880-1950 and Annually 1951-59

Note.—Figures for 1869-1900 are given in the 1938 Year Book, p. 958; for 1901-39 in the 1942 edition, p. 855; and for 1940-49 in the 1957-58 edition, p. 1168. Statistics of fraternal society insurance, excluded here, are given at pp. 1148-1149.

Year	New Insurance Effected during Year	Insurance in Force Dec. 31				Insurance in Force per Capita[1]
		Canadian Companies	British Companies	Foreign Companies	Total	
	$	$	$	$	$	$
1880	13,906.887	37,838,518	19,789,863	33,643,745	91,272,126	21.45
1890	39,802,956	135,218,990	31,613,730	81,591,847	248,424,567	51.98
1900	67,729,115	267,151,086	39,485,344	124,433.416	431,069,846	81.32
1910	150,785,305	565,667,110	47,816,775	242,629,174	856,113,059	122.51
1920	630,110,900	1,664,348,605	76,883,090	915,793,798	2,657,025,493	310.55
1930	884,749,748	4,319,370,209	117,410,860	2,055,502,125	6,492,283,194	636.00
1940	590,205,536	4,609,213.977	145,603,299	2,220,505,184	6,975,322.460	612.89
1950	1,798,864,211	10,756.249,942	342,878,530	4,646,707,595	15,745,836,067	1,148.33
1951	1,990,926,006	11,807,992,826	391,382,883	5,036,207,593	17,235,583,302	1,230.32
1952	2,287,264,465	13,085,349,418	443,275,711	5,562,003,368	19,090,628,497	1,322.98
1953	2,551,393,073	14,526,740,295	519,137,847	6,181,027,477	21,226,905,619	1,436.09
1954	2,656,722,341	15,765,916,390	596,756.619	6,771.905,859	23,134,578,868	1,513.35
1955	3,154,670,863	17,401,229,498	691,660,141	7,358,681,886	25,451,571,525	1,621.33
1956	4,119,767,664	19,783,194,985	819,968,279	8,484,252,879	29,087,416,143	1,808.81
1957	4,936,358,903	22,262,730,280	994,762,620	9,829,563,601	33,087,056,501	1,994.52
1958	5,129,714,126	24,560,264,322	1,170,343,106	10,765,171,257	36,495,778,685	2,140.77
1959	5,622,229,317	27,695,965,612	1,332,991,403	11,844,852,757	40,873,809,772	2,343.41

[1] Based on official estimates of population given at p. 165.

4.—Summary of Life Insurance in Canada Transacted by Companies under Federal Registration, 1957-59

Item		1957	1958	1959
Canadian Companies—				
New policies effected during year	No.	387,840	389,225	375,603
	$	3,037,487,837	3,345,151,460	3,736,273,098
Policies in force Dec. 31	No.	4,843,653	4,942,324	5,039,384
	$	22,262,730,280	24,560,264,322	27,695,965,612
Policies ceased by death or maturity	No.	46,167	46,432	45,514
	$	126,600,544	133,520,891	144,711,281
Insurance premiums	$	405,518,078	432,683,366	463,604,526
Claims incurred[1]	$	133,194,500	141,248,140	152,564,173

[1] Death, disability and maturity under insurance and annuity contracts.

4.—Summary of Life Insurance in Canada Transacted by Companies under Federal Registration, 1957-59—concluded

Item		1957	1958	1959
British Companies—				
New policies effected during year	No.	31,202	27,592	25,751
	$	226,584,627	224,776,123	224,673,981
Policies in force Dec. 31	No.	222,504	234,196	242,901
	$	994,762,620	1,170,343,106	1,332,991,403
Policies ceased by death or maturity	No.	2,318	2,349	2,438
	$	4,417,361	4,458,013	5,254,612
Insurance premiums	$	21,368,630	24,409,973	29,553,907
Claims incurred[1]	$	5,147,924	5,126,582	6,047,985
Foreign Companies—				
New policies effected during year	No.	331,946	308,971	296,040
	$	1,672,286,439	1,559,786,543	1,661,282,238
Policies in force Dec. 31	No.	5,037,882	4,951,638	4,900,303
	$	9,829,563,601	10,765,171,257	11,844,852,757
Policies ceased by death or maturity	No.	77,606	86,964	46,836
	$	57,912,389	64,443,831	59,805,153
Insurance premiums	$	180,224,032	191,420,246	204,582,461
Claims incurred[1]	$	62,327,448	65,543,051	64,680,849
All Companies—				
New policies effected during year	No.	750,988	725,788	697,394
	$	4,936,358,903	5,129,714,126	5,622,229,317
Policies in force Dec. 31	No.	10,104,039	10,128,158	10,182,588
	$	33,087,056,501	36,495,778,685	40,873,809,772
Policies ceased by death or maturity	No.	126,091	135,745	94,788
	$	188,930,294	202,422,735	209,771,046
Insurance premiums	$	607,110,740	648,513,585	697,740,894
Claims incurred[1]	$	200,669,872	211,917,773	223,293,007

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[1] Death, disability and maturity under insurance and annuity contracts.

5.—Ordinary and Industrial Life Insurance Policies Effected and in Force in Canada by Companies under Federal Registration, 1957-59

Year, Type of Policy and Nationality of Company	New Policies Effected			Policies in Force Dec. 31		
	No.	Amount	Average Amount per Policy	No.	Amount	Average Amount per Policy
		$	$		$	$
1957						
Ordinary Policies—						
Canadian	343,380	2,277,740,846	6,633	4,191,564	15,780,032,194	3,765
British	31,142	207,359,637	6,659	186,989	931,418,618	4,981
Foreign	280,613	1,375,992,562	4,904	2,231,948	5,612,777,523	2,515
Industrial Policies—						
Canadian	42,693	50,888,306	1,192	640,983	583,214,543	910
British	—	—	—	35,333	4,892,496	138
Foreign	47,433	21,983,748	463	2,792,828	1,011,294,853	362
1958						
Ordinary Policies—						
Canadian	346,191	2,489,780,234	7,192	4,300,816	17,201,843,900	4,000
British	27,520	208,059,981	7,560	200,738	1,076,412,792	5,362
Foreign	258,655	1,258,245,565	4,865	2,332,816	6,270,470,632	2,688
Industrial Policies—						
Canadian	41,333	49,599,902	1,200	629,510	584,765,479	929
British	—	—	—	33,228	4,474,557	135
Foreign	45,698	21,411,929	469	2,603,677	954,101,714	366

5.—Ordinary and Industrial Life Insurance Policies Effected and in Force in Canada by Companies under Federal Registration, 1957-59—concluded

Year, Type of Policy and Nationality of Company	New Policies Effected			Policies in Force Dec. 31		
	No.	Amount	Average Amount per Policy	No.	Amount	Average Amount per Policy
		$	$		$	$
1959						
Ordinary Policies—						
Canadian	334,854	2,564,125,145	7,657	4,405,999	18,700,799,040	4,244
British	25,686	213,727,701	8,321	211,343	1,218,946,427	5,768
Foreign	251,794	1,239,742,861	4,924	2,419,906	6,861,758,172	2,836
Industrial Policies—						
Canadian	37,953	46,422,646	1,223	617,224	584,108,668	946
British	—	—	—	31,282	4,084,021	131
Foreign	40,230	19,344,873	481	2,463,410	914,368,310	371

6.—Group Life Insurance Effected and in Force in Canada by Companies under Federal Registration, 1957-59

Year and Nationality of Company	Effected		In Force Dec. 31			
	Policies	Amount	Policies	Certificates	Amount	Average Amount per Certificate
	No.	$	No.	No.	$	$
1957						
Canadian	1,767	708,858,685	11,106	5,415,995	5,899,483,543	1,089
British	60	19,224,990	182	15,794	58,451,506	3,701
Foreign	3,900	274,310,129	13,106	2,317,711	3,205,491,225	1,383
1958						
Canadian	1,701	805,771,324	11,998	5,677,800	6,773,654,943	1,193
British	72	16,716,142	230	19,329	89,455,757	4,628
Foreign	4,618	280,129,049	15,145	2,314,709	3,540,598,911	1,530
1959						
Canadian	2,796	1,125,725,307	16,161	7,793,897	8,411,057,904	1,079
British	65	10,946,280	276	21,677	109,960,955	5,073
Foreign	4,016	402,194,504	16,987	2,707,345	4,068,726,275	1,503

7.—Insurance Death Rates in Canada, 1957-59

Type of Insurer	1957			1958			1959		
	Policies Exposed to Risk	Policies Terminated by Death	Death Rate per 1,000	Policies Exposed to Risk	Policies Terminated by Death	Death Rate per 1,000	Policies Exposed to Risk	Policies Terminated by Death	Death Rate per 1,000
	No.	No.		No.	No.		No.	No.	
All companies, ordinary	6,507,447	34,312	5.3	6,740,661	36,450	5.4	6,963,033	36,594	5.3
All companies, industrial	3,604,410	30,665	8.5	3,384,562	33,565	9.9	3,204,368	30,405	9.5
Fraternal benefit societies	387,755	4,097	10.6	500,142	4,252	8.5	512,587	4,240	8.3
Totals	**10,499,612**	**69,074**	**6.6**	**10,625,365**	**74,267**	**7.0**	**10,679,988**	**71,239**	**6.7**

Subsection 3.—Finances of Companies Transacting Life Insurance under Federal Registration

The financial statistics in Tables 8 and 9 relate only to life insurance transacted by companies under federal registration. The figures for British and foreign companies apply to their assets, liabilities and operations in Canada only. On the other hand, the assets and liabilities, revenue and expenditure of Canadian companies are given for total business, including business arising out of Canada as well as in Canada.

8.—Total Assets and Liabilities for Life Insurance of Canadian Companies under Federal Registration and Assets and Liabilities in Canada for Life Insurance of British and Foreign Companies under Federal Registration, 1957-59.

Assets and Liabilities	1957	1958	1959
	$	$	$
Canadian Companies			
Total Assets[1]	**7,103,924,642**	**7,583,162,563**	**8,095,250,934**
Bonds	3,528,395,387	3,700,885,731	3,868,490,831
Stocks	354,571,408	367,587,149	406,687,199
Mortgage loans on real estate	2,432,230,118	2,609,040,713	2,863,597,911
Agreements of sale of real estate	5,352,872	5,076,560	5,520,045
Real estate	227,651,658	254,748,709	265,296,563
Policy loans	352,057,583	369,961,497	394,550,573
Cash	66,668,934	79,671,736	68,716,852
Investment income, due and accrued	65,126,851	71,232,841	78,630,118
Outstanding insurance premiums and annuity considerations	61,934,972	64,536,138	69,370,878
Shares of company's capital stock (purchased under mutualization plan)	—	46,721,060	59,344,565
Other assets	9,934,859	13,700,429	15,045,399
Total Liabilities	**6,687,122,935**	**7,130,219,806**	**7,606,269,809**
Actuarial reserve for contracts in force	5,603,059,980	5,979,494,193	6,391,158,876
Amounts on deposit pertaining to contracts	559,141,650	590,890,429	617,130,121
Outstanding claims under contracts	58,513,401	60,410,411	64,216,555
Other liabilities	466,407,904	499,424,773	533,764,257
Surplus	402,970,112	438,012,242	472,979,421
Capital stock paid up	13,831,595	14,930,515	16,001,704
British Companies			
Assets in Canada[2]	**317,544,069**	**374,366,300**	**406,111,524**
Bonds	182,130,139	211,628,506	222,697,172
Stocks	45,993,074	59,957,983	63,902,020
Mortgage loans on real estate	71,757,978	80,041,848	90,257,450
Real estate	5,190,771	6,037,469	12,526,100
Policy loans	6,688,440	7,303,412	8,322,726
Cash	2,910,756	2,727,569	3,258,817
Investment income, due and accrued	1,096,811	1,316,267	1,458,245
Outstanding insurance premiums and annuity considerations	1,650,513	1,957,702	2,107,701
Other assets	125,587	3,395,544	1,581,293
Liabilities in Canada	**293,441,989**	**335,191,504**	**382,690,764**
Actuarial reserve for contracts in force	287,488,068	329,761,180	374,755,633
Outstanding claims under contracts	2,302,243	1,566,622	2,171,721
Other liabilities	3,651,678	3,863,702	5,763,410
Excess of assets over liabilities in Canada	**24,102,080**	**39,174,796**	**23,420,760**
Foreign Companies			
Assets in Canada[2]	**1,391,762,031**	**1,432,822,001**	**1,494,222,700**
Bonds	990,184,385	1,008,282,918	1,026,683,044
Stocks	1,680,000	1,800,000	1,720,000
Mortgage loans on real estate	298,158,216	311,457,795	349,208,596
Real estate	4,435,263	6,061,352	6,888,139
Policy loans	64,796,890	66,617,512	69,780,299
Cash	10,857,798	15,321,412	14,671,611
Investment income, due and accrued	15,019,272	16,199,473	17,663,800
Outstanding insurance premiums and annuity considerations	6,338,063	6,854,689	7,303,779
Other assets	292,144	226,850	303,432
Liabilities in Canada	**1,252,547,731**	**1,313,116,206**	**1,389,744,933**
Actuarial reserve for contracts in force	1,155,039,935	1,208,408,136	1,277,774,729
Outstanding claims under contracts	10,025,842	13,117,132	14,260,043
Other liabilities	87,481,954	91,590,938	97,710,161
Excess of assets over liabilities in Canada	**139,214,300**	**119,705,795**	**104,477,767**

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[1] At book values. The liabilities include a reserve equal to the amount, if any, by which the total book value of bonds, stocks and real estate exceeds the total market value (or amortized value where applicable).

[2] At market values.

9.—Total Revenue and Expenditure for Life Insurance Transacted by Canadian Companies under Federal Registration and Revenue and Expenditure in Canada for Life Insurance Transacted by British and Foreign Companies under Federal Registration, 1957-59.

Revenue and Expenditure	1957	1958	1959
	$	$	$
Canadian Companies			
Total Revenue	**1,144,998,110**	**1,235,561,691**	**1,357,486,095**
Insurance premiums and annuity considerations	813,269,328	875,413,883	965,192,845
Investment income	301,124,391	330,305,292	361,341,434
Sundry items	30,604,391	29,842,516	30,951,816
Total Expenditure	**1,083,928,186**	**1,161,389,411**	**1,278,711,041**
Claims incurred	392,853,193	411,294,197	465,457,119
Normal increase in actuarial reserve	333,260,705	380,854,198	401,660,858
Taxes, licences and fees	21,794,814	23,803,637	25,195,697
Commissions and general expenses	181,491,681	194,798,308	207,371,899
Sundry items	55,712,245	44,233,079	61,188,574
Dividends to policyholders	89,973,796	97,815,352	106,493,008
Increase in provision for profits to policyholders	8,841,752	8,590,640	11,343,886
Analysis of Increase in Surplus—			
Excess of revenue over expenditure	61,069,924	74,172,280	78,775,054
Net capital gain on investments	4,798,409	8,047,616	5,880,989
Other credits to surplus (net)	2,127,755	−23,213,832[1]	−32,262,950[1]
Net increase in special reserves or funds	−28,860,663	−20,995,405	−8,281,320
Special increase in actuarial reserve	−3,259,569	518,441	−6,555,415
Dividends to shareholders	−3,507,576	−3,475,198[2]	−2,498,715[2]
Increase in surplus (policyholders and shareholders)	32,368,280	35,053,902	35,057,643
British Companies			
Revenue in Canada	**62,466,080**	**72,328,769**	**82,183,753**
Insurance premiums and annuity considerations	48,692,259	55,675,767	62,926,136
Investment income	13,165,407	15,286,673	18,223,098
Sundry items	608,414	1,366,329	1,034,519
Expenditure in Canada	**28,758,047**	**31,757,240**	**40,869,074**
Claims incurred	14,789,551	16,128,458	21,119,885
Taxes, licences and fees	508,811	559,422	709,531
Commissions and general expenses	10,330,293	11,163,005	11,751,795
Other expenditure	660,137	925,034	928,849
Dividends to policyholders	2,469,255	2,981,321	6,359,014
Foreign Companies			
Revenue in Canada	**257,743,120**	**274,161,505**	**295,402,246**
Insurance premiums and annuity considerations	191,044,136	200,691,286	214,845,931
Investment income	57,021,447	62,010,010	68,404,782
Sundry items	9,677,537	11,460,209	12,151,533
Expenditure in Canada	**195,061,765**	**198,137,546**	**204,967,518**
Claims incurred	100,887,924	100,177,803	100,706,467
Taxes, licences and fees	5,037,039	5,560,088	5,994,497
Commissions and general expenses	52,386,589	55,108,125	53,923,595
Other expenditure	10,659,246	10,026,174	12,299,928
Dividends to policyholders	26,090,967	27,265,356	32,043,031

[1] Includes amounts written off shares purchased under mutualization plan. [2] Dividends on shares other than those purchased by the company under the mutualization plan.

Subsection 4.—Life Insurance Effected through Fraternal Benefit Societies

In addition to life insurance, some fraternal benefit societies grant other insurance benefits to members, notably sickness benefits, but these are relatively unimportant. Table **10** gives statistics of life insurance effected through fraternal benefit societies by Canadian members and Table **11** shows statistics of assets, liabilities, income and expenditure relating to all business of Canadian societies and to the business in Canada of foreign societies. The rates charged by these societies are computed to be sufficient to provide the benefits granted, having regard for actuarial principles. The benefit funds of each society must be valued annually by a qualified actuary (Fellow, by examination, of the Institute of Actuaries of Great Britain, of the Faculty of Actuaries in Scotland, or of the Society of Actuaries) and a readjustment of rates or benefits must be made, unless the actuary certifies to the solvency of each fund. The first sections of Tables **10** and **11** relate to the 16 Canadian societies registered by the federal Department of Insurance, only one of which does not grant life insurance benefits.

Under an amendment to the Insurance Act, effective Jan. 1, 1920, all foreign fraternal benefit societies were required to obtain authority from the Federal Government prior to transacting business in Canada. However, any such societies which at that date were transacting business under provincial licences, though forbidden to accept new members, were permitted to continue all necessary transactions in respect of insurance already in force. Most of these societies and some foreign societies that had not previously been licensed by the provinces have since obtained federal authority to transact business. At the end of 1959 there were 32 foreign fraternal benefit societies federally registered to transact business in Canada although two of these do not grant life insurance benefits. One foreign fraternal benefit society became registered during the year.

10.—Summary of Life Insurance in Canada Transacted by Fraternal Benefit Societies under Federal Registration, 1957-59

Item		1957	1958	1959
Canadian Societies				
Premiums	$	3,869,231	4,979,817	5,361,575
Claims incurred	$	3,557,022	3,786,652[1]	3,581,052[1]
New certificates effected	No.	27,590	46,543	42,266
	$	53,371,945	89,161,447	97,138,221
Certificates in force Dec. 31	No.	231,657	322,253	329,770
	$	263,477,451	375,672,122	417,740,985
Certificates ceased by death or maturity	No.	2,994	2,888	2,873
	$	2,480,924	2,366,139	2,354,578
Foreign Societies				
Premiums	$	3,954,895	4,678,141	5,144,588
Claims incurred	$	2,911,222	2,805,659[1]	3,052,528[1]
New certificates effected	No.	9,972	11,888	11,641
	$	25,990,909	29,060,958	31,390,044
Certificates in force Dec. 31	No.	131,874	154,507	157,079
	$	177,453,616	205,735,161	221,515,950
Certificates ceased by death or maturity	No.	1,517	1,731	1,838
	$	1,655,135	1,837,312	1,944,450

[1] Exclusive of dividends, separated from claims incurred in 1958.

11.—Financial Statistics for Fraternal Benefit Societies under Federal Registration, 1959

Item	Amount	Item	Amount
	$		$
Canadian Societies[1]			
Assets	**147,000,004**	**Analysis of Increase in Surplus—**	
Bonds	107,311,065	Excess of revenue over expenditure	2,211,335
Stocks	7,263,779	Net capital gain on investments	79,956
Mortgage loans on real estate	16,591,638	Other credits to surplus (net)	−16,292
Agreements of sale of real estate	962,317	Net increase in special reserves	−1,276,749
Real estate	3,723,796	Increase in surplus	998,250
Certificate loans and liens	5,226,251		
Cash	2,115,405	**Foreign Societies**[2]	
Investment income, due and accrued	1,186,030	**Assets**	**51,277,900**
Outstanding premiums, contributions and dues	2,325,277	Bonds	41,534,150
Other	294,446	Mortgage loans on real estate	3,129,123
Liabilities and Surplus	**147,000,004**	Real estate	952,595
Actuarial reserve	110,031,646	Certificate loans and liens	3,260,744
Outstanding claims	1,020,588	Cash	1,267,842
Amounts on deposit	155,519	Investment income, due and accrued	611,927
Other	21,529,144	Outstanding premiums, contributions and dues	520,646
Surplus	14,263,107	Other	873
Revenue	**29,523,550**	**Liabilities**	**45,246,508**
Premiums, contributions and dues	22,619,868	Actuarial reserve	40,429,996
Investment income	6,190,531	Outstanding claims	894,409
Other	713,151	Other	3,922,103
Expenditure	**27,312,215**	**Revenue**	**10,648,132**
Claims incurred	7,569,143	Premiums, contributions and dues	8,001,474
Increase in actuarial reserve	7,040,785	Investment income	2,174,245
Taxes, licences and fees	72,351	Other	472,413
Commissions	5,252,501	**Expenditure**	**6,501,583**
General expenses	5,178,154	Claims incurred	4,311,449
Other	625,899	Taxes, licences and fees	41,301
Dividends to members	1,404,147	Commissions	728,230
		General expenses	502,401
		Other	382,429
Increase in provision for profits to policyholders	169,235	Dividends to members	535,773

[1] All funds, business in and out of Canada. [2] All funds, business in Canada only.

Subsection 5.—Life Insurance Effective and in Force Outside Canada by Canadian Companies under Federal Registration

In this Subsection, there are given for the years 1958 and 1959 summary statistics of insurance effected and insurance in force at the end of the year in currencies other than Canadian dollars, as written by Canadian companies under federal registration. The statistics for individual companies are shown in Table **12** and for individual currencies in Table **13**. The data given in both of these tables are in terms of Canadian dollars, the conversions from the various foreign currencies having been made at the book rates of exchange used by the various companies. Although these book rates of exchange do not follow the day-to-day fluctuations in the current rates of exchange, they are adjusted when necessary to keep them reasonably in line with the current rates.

Canadian life insurance companies operating under federal registration at Dec. 31, 1959, had life insurance in force amounting to $11,574,916,344 in countries outside Canada. Insurance in force in currencies other than Canadian dollars amounted to $11,526,717,132; the difference between these figures is presumably the net amount of business in countries outside Canada transacted in Canadian currency. The business in force in Canada of Canadian companies registered by the Federal Government amounted to $27,695,965,612 at Dec. 31, 1959, and the total business on the books of these companies, in and out of Canada, amounted to $39,270,881,956. Thus, about 30 p.c. of the total business in force for Canadian companies registered by the Federal Government was in force in countries outside Canada.

In connection with their business outside Canada, the Canadian life insurance companies registered by the Federal Government held, at the end of 1959, Commonwealth and foreign investments in the amount of $2,678,488,923.

12.—Life Insurance Effected and in Force for Canadian Companies (excluding Fraternal Societies) under Federal Registration, in Currencies other than Canadian Dollars, by Company, 1958 and 1959.

Year and Company	Insurance Effected			Insurance in Force Dec. 31		
	Commonwealth Currencies	Foreign Currencies	Total	Commonwealth Currencies	Foreign Currencies	Total
	$	$	$	$	$	$
1958						
Alliance Mutual	—	25,910	25,910	—	2,862,295	2,862,295
Canada	41,744,441	137,438,471	179,182,912	260,773,610	665,285,494	926,059,104
Commercial	—	—	—	—	60,000	60,000
Confederation	28,952,718	69,372,072	98,324,790	211,196,828	374,955,257	586,152,085
Continental	—	—	—	16,867	93,031	109,898
Crown	18,045,154	145,914,091	163,959,245	82,125,025	705,847,553	787,972,578
Dominion	3,703,899	27,814,815	31,518,714	19,467,387	177,346,081	196,813,468
Dom. of Canada General	202,428	—	202,428	2,146,482	3,000	2,149,482
T. Eaton	—	—	—	231,740	3,333	235,073
Equitable	—	—	—	—	72,261	72,261
Great-West	—	193,287,600	193,287,600	106,664	1,458,244,388	1,458,351,052
Imperial	28,625,135	2,633,479	31,258,614	142,224,606	43,276,735	185,501,341
London	—	1,038,602	1,038,602	—	8,498,234	8,498,234
Manufacturers	98,512,459	157,917,774	256,430,233	627,124,771	957,575,446	1,584,700,217
Maritime	134,250	110,864	245,114	1,622,234	179,440	1,801,674
Monarch	38,736	—	38,736	38,736	251,804	290,540
Montreal	—	5,000	5,000	128,486	253,567	382,053
Mutual	—	628,939	628,939	577,539	23,720,318	24,297,857
National	4,311,982	1,991,901	6,303,883	21,195,767	10,534,657	31,730,424
North American	7,655,993	46,668,983	54,324,976	39,105,034	233,904,473	273,009,507
Northern	—	3,767,097	3,767,097	29,500	28,614,279	28,643,779
Sauvegarde	—	—	—	—	5,000	5,000
Sun	189,570,852	298,165,107	487,735,959	1,202,461,917	3,039,990,268	4,242,452,185
Western	—	71,544	71,544	—	168,696	168,696
Totals, 1958	**421,498,047**	**1,086,852,249**	**1,508,350,296**	**2,610,573,193**	**7,731,745,610**	**10,342,318,803**

12.—Life Insurance Effected and in Force for Canadian Companies (excluding Fraternal Societies) under Federal Registration, in Currencies other than Canadian Dollars, by Company, 1958 and 1959—concluded.

Year and Company	Insurance Effected			Insurance in Force Dec. 31		
	Commonwealth Currencies	Foreign Currencies	Total	Commonwealth Currencies	Foreign Currencies	Total
	$	$	$	$	$	$
1959						
Alliance Mutual	—	125,636	125,636	—	2,855,213	2,855,213
Canada	42,369,575	159,835,982	202,205,557	288,035,324	781,790,874	1,069,826,198
Commercial	—	—	—	—	47,568	47,568
Confederation	35,789,569	75,748,192	111,537,761	240,795,701	422,331,105	663,126,806
Continental	—	—	—	13,877	247,831	261,708
Crown	19,346,649	188,454,135	207,800,784	92,010,650	853,475,250	945,485,900
Dominion	5,494,749	42,523,319	48,018,068	23,550,716	210,245,730	233,796,446
Dom. of Canada General	195,686	—	195,686	2,157,195	6,000	2,163,195
T. Eaton	—	—	—	236,540	3,333	239,873
Equitable	—	—	—	—	70,939	70,939
Great-West	—	315,640,507	315,640,507	102,942	1,695,992,940	1,696,095,882
Imperial	34,706,976	5,062,154	39,769,130	168,178,832	45,226,939	213,405,771
London	—	604,216	604,216	—	8,583,336	8,583,336
Manufacturers	106,200,183	175,096,019	281,296,202	700,397,327	1,065,616,161	1,766,013,488
Maritime	130,083	158,178	288,261	1,702,849	305,733	2,008,582
Monarch	—	73,877	73,877	—	301,086	301,086
Montreal	—	35,000	35,000	117,124	253,345	370,469
Mutual	—	3,631,264	3,631,264	566,101	25,753,286	26,319,387
National	6,024,518	5,910,701	11,935,219	25,528,467	15,504,443	41,032,910
North American	12,823,546	66,880,828	79,704,374	50,998,954	279,152,627	330,151,581
Northern	—	4,148,276	4,148,276	25,750	30,766,959	30,792,709
Sauvegarde	—	—	—	—	5,000	5,000
Sun	214,357,700	276,176,637	490,534,337	1,300,418,763	3,193,120,585	4,493,539,348
Western	—	84,660	84,660	—	223,737	223,737
Totals, 1959	**477,439,234**	**1,320,189,581**	**1,797,628,815**	**2,894,837,112**	**8,631,880,020**	**11,526,717,132**

Approximately 70 p.c. of all business in force in currencies other than Canadian is in United States currency and 17 p.c. is in sterling. From a slightly different point of view, approximately 25 p.c. of this business in force is in currencies of Commonwealth countries other than Canada, and 75 p.c. in currencies of foreign countries.

13.—Life Insurance Effected and in Force for Canadian Companies (excluding Fraternal Societies) under Federal Registration, in Currencies other than Canadian Dollars, by Currency, 1958 and 1959.

Currency	1958		1959	
	Insurance Effected	Insurance in Force	Insurance Effected	Insurance in Force
	$	$	$	$
Commonwealth Currencies	**421,498,047**	**2,610,573,193**	**477,439,234**	**2,894,837,112**
Pounds—				
Sterling	265,614,758	1,756,441,899	282,083,587	1,908,681,955
Australia	—	6,047	67,200	73,247
British West Indies and Bermuda	15,622,096	100,275,004	20,891,146	115,097,742
Cyprus	—	—	209,656	1,046,106
Rhodesia	21,126,597	60,565,726	26,425,249	80,171,296
South Africa	79,829,391	425,668,527	101,330,196	495,116,957
Dollars—				
British Honduras	—	703,759	—	681,577
British West Indies, Bermuda and British Guiana	30,395,289	152,983,102	39,454,235	181,898,332
Hong Kong	1,246,608	12,046,336	1,114,085	12,559,216
Malayan	3,515,427	28,559,542	3,467,689	29,080,670
Rupees—				
Ceylon	163,148	36,376,413	—	33,795,394
India	—	6,939,464	—	6,306,159
Pakistan	—	1,024,767	—	922,033
Shillings—				
East Africa	3,984,733	28,982,607	2,396,191	29,406,428

13.—Life Insurance Effected and in Force for Canadian Companies (excluding Fraternal Societies) under Federal Registration, in Currencies other than Canadian Dollars, by Currency, 1958 and 1959—concluded.

Currency	1958		1959	
	Insurance Effected	Insurance in Force	Insurance Effected	Insurance in Force
	$	$	$	$
Foreign Currencies	**1,086,852,249**	**7,731,745,610**	**1,320,189,581**	**8,631,880,020**
Bahts (Thailand)	—	80,161	—	54,682
Bolivars (Venezuela)	2,863,876	25,142,819	2,136,125	24,897,761
Cordobas (Nicaragua)	—	5,227	—	5,227
Dollars (United States of America)	1,032,832,807	7,357,184,159	1,260,991,624	8,197,105,944
Francs (France)	—	7,717	—	4,467
Francs (Switzerland)	—	7,280	—	2,080
Guilders (Netherlands)	22,940	516,499	—	431,866
Guilders (Netherlands Antilles)	1,975,002	15,172,118	2,199,262	15,994,053
Kyats (Burma)	—	203,384	—	157,145
Pesos (Argentina)	216,081	4,075,697	28,509	3,709,440
Pesos (Chile)	—	362	—	134
Pesos (Colombia)	—	23,940	—	23,940
Pesos (Cuba)	29,634,947	199,941,058	24,931,116	207,861,650
Pesos (Dominican Republic)	4,039,910	14,031,809	2,657,378	14,653,477
Pesos (Mexico)	134,000	6,754,286	105,000	5,852,277
Pesos (Philippines)	12,656,986	76,291,078	12,350,653	81,212,989
Pounds (Egypt)	—	18,016,304	—	16,574,505
Pounds (Irish)	—	—	11,870,873	46,937,821
Pounds (Israel)	2,475,700	12,630,723	2,919,041	14,867,565
Rupiahs (Indonesia)	—	1,514,072	—	1,396,270
Soles (Peru)	—	143,780	—	133,573
Yen (Japan)	—	3,137	—	3,154
Totals	**1,508,350,296**	**10,342,318,803**	**1,797,628,815**	**11,526,717,132**

Section 2.—Fire and Casualty Insurance

At the end of 1959 there were 286 companies registered by the Federal Government to transact fire insurance in Canada (84 Canadian, 85 British and 117 foreign). Of these companies, 277 (78 Canadian, 85 British and 114 foreign) were also registered to transact casualty insurance. In addition, 87 companies were registered by the Federal Government to transact casualty insurance but not fire insurance (19 Canadian, 6 British and 62 foreign). Of the companies registered to transact fire and/or casualty insurance, 60 were also registered to transact life insurance; 13 of these were registered for fire, life and casualty insurance and 47 for life and casualty but not fire insurance. It should be noted also that, in addition to the companies registered by the Federal Government to transact casualty insurance, there were 24 registered fraternal benefit societies transacting accident and sickness insurance, of which 21 also transacted life insurance.

As shown in Table 14, some fire and casualty insurance is transacted in Canada by companies that are provincially licensed only. These companies generally confine their operations to the province of incorporation but may be allowed to sell insurance in other provinces. Many of them are mutual organizations transacting only fire insurance on a county, municipal or parish basis.

Table 14 summarizes net premiums written and net claims incurred for the years 1958 and 1959 in the fields of fire insurance and casualty insurance in Canada. These data are presented on the basis of the supervising government authorities for the companies concerned. The table relates to insurance companies only; no data are included with respect to fraternal benefit societies.

14.—Fire and Casualty Insurance Transacted in Canada, 1958 and 1959

Item	1958		1959	
	Net Premiums Written	Net Claims Incurred	Net Premiums Written	Net Claims Incurred
	$	$	$	$
Fire Insurance				
Federally registered companies	177,364,450	88,151,837	196,702,991	96,054,754
Provincial licensees	23,977,899	13,320,365	26,898,159	14,725,798
In province by which incorporated	*21,746,866*	*11,845,026*	*24,229,094*	*13,067,533*
Outside province by which incorporated	*2,231,033*	*1,475,339*	*2,669,065*	*1,658,265*
Lloyds, London	8,864,809	7,050,985	9,431,630	7,900,105
Totals, Fire	**210,207,158**	**108,523,187**	**233,032,780**	**118,680,657**
Casualty Insurance				
Federally registered companies	531,962,152	328,014,057	556,112,462	324,708,480
Provincial licensees	52,226,265	27,761,030	57,353,016	31,646,824
In province by which incorporated	*45,910,111*	*24,616,511*	*51,289,393*	*28,550,816*
Outside province by which incorporated	*6,316,154*	*3,144,519*	*6,063,623*	*3,096,008*
Lloyds, London	29,474,009	21,630,634	31,679,884	16,927,789
Totals, Casualty	**613,662,426**	**377,405,721**	**645,145,362**	**373,283,093**
Totals, Fire and Casualty	**823,869,584**	**485,928,908**	**878,178,142**	**491,963,750**

Subsection 1.—Fire Insurance Transacted in Canada by Companies under Federal Registration

The net premiums written have increased very rapidly in recent years, having more than doubled since 1948. The net claims incurred have kept pace with this increase in net premiums written.

15.—Fire Insurance Transacted in Canada by Companies under Federal Registration, 1948-59

Year	Net Premiums Written during Year	Net Claims Incurred during Year	Year	Net Premiums Written during Year	Net Claims Incurred during Year
	$	$		$	$
1948	98,191,514	45,143,565	1954	148,446,105	70,445,544
1949	103,955,183	46,567,188	1955	146,444,845	77,836,245
1950	115,648,449	58,524,685	1956	155,506,787	86,088,850
1951	134,496,218	52,086,541	1957	156,246,117	109,757,161
1952	139,777,732	61,124,918	1958	177,364,450	88,151,837
1953	145,937,546	66,787,604	1959	196,702,991	96,054,754

16.—Fire Insurance in Canada classified by Province and by Nationality of Company under Federal Registration, 1958 and 1959

(Registered reinsurance deducted)

Year and Province	Canadian Companies		British Companies		Foreign Companies	
	Net Premiums Written	Net Claims Incurred	Net Premiums Written	Net Claims Incurred	Net Premiums Written	Net Claims Incurred
	$	$	$	$	$	$
1958						
Newfoundland	473,060	264,325	1,383,415	509,436	450,316	166,041
Prince Edward Island	228,295	263,023	397,313	372,531	120,323	66,189
Nova Scotia	1,935,082	986,964	2,864,292	1,632,726	1,427,516	722,405
New Brunswick	1,591,345	686,508	2,560,625	1,296,056	1,271,429	568,835
Quebec	18,415,909	9,960,060	20,981,453	11,411,783	18,393,602	10,762,375
Ontario	24,444,244	12,227,183	24,050,936	11,394,429	24,515,361	11,812,251
Manitoba	3,834,821	1,460,265	2,735,645	1,177,625	2,326,784	1,172,263
Saskatchewan	3,425,482	1,356,950	1,662,980	771,420	1,615,949	855,634
Alberta	4,294,920	1,669,859	4,335,793	1,803,921	3,619,115	1,318,407
British Columbia	4,373,758	2,054,309	6,400,220	2,828,506	6,216,722	3,546,576
Yukon and Northwest Territories[1]	123,397	61,517	462,758	138,462	198,649	71,687
Canada, 1958	**63,140,313**	**30,990,963**	**67,835,430**	**33,336,895**	**60,155,766**	**31,062,663**
1959						
Newfoundland	587,024	481,253	1,456,299	1,004,195	628,618	408,099
Prince Edward Island	285,389	101,332	421,116	210,495	191,008	59,559
Nova Scotia	2,244,701	1,316,701	3,343,173	2,334,188	1,897,851	1,291,342
New Brunswick	1,774,782	878,455	2,594,356	1,303,026	1,582,023	863,442
Quebec	20,086,645	9,396,649	24,101,318	10,665,238	22,444,497	9,921,365
Ontario	24,841,496	13,943,580	25,513,129	13,962,653	26,917,167	13,507,304
Manitoba	3,921,331	2,144,819	2,661,787	1,267,390	2,356,049	1,242,297
Saskatchewan	3,124,047	951,543	1,563,383	636,707	1,948,585	877,596
Alberta	4,313,753	1,826,122	4,412,773	1,765,951	4,424,967	1,291,094
British Columbia	4,978,092	2,122,330	7,433,004	4,362,243	7,949,753	3,427,962
Yukon and Northwest Territories[1]	161,172	44,406	413,540	89,854	194,334	21,293
Canada, 1959	**66,318,432**	**33,207,190**	**73,913,878**	**37,601,940**	**70,534,852**	**32,911,353**

[1] Includes certain 'floater' business that cannot be apportioned to any one province.

Subsection 2.—Fire Losses

The information in Tables **17** to **20**, which deals with the loss of property and life caused by fire, has been summarized from the annual *Statistical Report of Fire Losses in Canada* prepared by the Dominion Fire Commissioner, Department of Public Works. Federal losses not included in these figures in 1959 amounted to $6,256,719 from 3,718 fires.

17.—Statistics of Fire Losses, 1950-59

Note.—Figures for 1926-46 are given in the 1947 Year Book, p. 1078, and those for 1947-49 in the 1960 edition, p. 1169. Figures from 1922 may be obtained from the Dominion Fire Commissioner, Department of Public Works.

Year	Fires Reported	Property Loss[1]	Loss per Capita	Deaths by Fire	Year	Fires Reported	Property Loss[1]	Loss per Capita	Deaths by Fire
	No.	$	$	No.		No.	$	$	No.
1950	59,710	81,525,298	5.88	439	1955[2]	70,096	102,767,776	6.59	569
1951	60,317	76,157,807	5.64	535	1956	80,746	106,772,153	6.64	601
1952	64,057	80,902,205	5.74	565	1957	82,088	133,492,277	8.05	638
1953	67,519	84,270,896	5.70	477	1958	86,919	120,258,696	7.05	532
1954	68,638	91,440,478	6.01	479	1959	84,241	124,532,238	7.06	560

[1] Excludes forest fires and Federal Government property losses.

[2] Newfoundland included from 1955.

The provincial property losses for 1956-59 given in Table **18** include both insured and uninsured losses.

18.—Fire Losses, by Province, 1956-59

Province or Territory	1956	1957	1958	1959		
	Property Loss[1]			Fires Reported	Property Loss[1]	Loss per Capita
	$	$	$	No.	$	$
Newfoundland	1,510,183	5,396,315	4,726,783	912	2,409,232	5.32
Prince Edward Island	444,180	891,015	1,027,267	442	839,912	8.15
Nova Scotia	4,024,029	3,436,728	3,714,389	2,383	4,571,624	6.36
New Brunswick	3,918,448	4,448,217	3,191,935	2,438	3,726,872	6.26
Quebec	36,900,300	48,408,380	44,776,995	35,794	40,989,820	8.10
Ontario	29,189,908	43,439,433	35,655,789	25,078	40,819,944	6.77
Manitoba	5,046,372	4,005,283	3,782,329	2,080	4,502,141	5.05
Saskatchewan	2,955,382	2,063,809	3,980,048	2,038	3,280,579	3.62
Alberta	6,840,901	6,532,451	6,490,742	4,674	7,102,221	5.62
British Columbia	15,308,745	14,534,628	12,702,394	8,268	14,859,552	9.33
Yukon and Northwest Territories	632,705	336,018	210,025	134	1,430,341	42.07
Canada	**106,772,153**	**133,492,277**	**120,258,696**	**84,241**	**124,532,238**	**7.06**

[1] Excludes forest fires and Federal Government property losses.

19.—Fire Losses, by Type of Property, 1957-59

Type of Property	1957		1958		1959	
	Fires Reported	Property Loss[1]	Fires Reported	Property Loss[1],[2]	Fires Reported	Property Loss[1]
	No.	$	No.	$	No.	$
Residential	61,099	30,667,492	66,464	27,797,073	63,294	28,654,218
Mercantile	7,937	43,902,473	8,480	51,169,929	6,553	35,408,540
Farm	5,099	9,445,788	5,141	10,165,959	5,906	11,926,439
Manufacturing	1,345	16,355,401	1,473	9,754,931	1,703	17,490,756
Institutional and assembly	1,042	7,863,917	1,016	6,287,605	1,050	8,143,459
Miscellaneous	5,566	25,257,206	4,345	12,823,916	5,735	22,908,826
Totals	**82,088**	**133,492,277**	**86,919**	**120,258,696**	**84,241**	**124,532,238**

[1] Excludes forest fires and Federal Government property losses. [2] Addition not accurate; breakdown for Newfoundland not complete.

20.—Value of Property Loss, by Reported Cause of Fire, 1957-59

Reported Cause	1957		1958		1959	
	Fires Reported	Property Loss[1]	Fires Reported	Property Loss[1]	Fires Reported	Property Loss[1]
	No.	$	No.	$	No.	$
Smokers' carelessness	31,425	6,022,515	36,052	5,656,205	34,028	5,914,818
Stoves, furnaces, boilers and smoke pipes	6,570	6,486,429	7,036	7,785,707	6,348	9,777,523
Electrical wiring and appliances	7,461	16,224,484	7,546	13,887,770	7,221	13,805,375
Matches	2,307	2,174,771	2,369	1,425,247	2,075	1,374,897
Defective and overheated chimneys and flues	3,633	2,628,501	3,372	2,956,795	3,144	3,427,013
Hot ashes, coals and open fires	2,014	2,058,806	1,764	1,267,018	1,484	1,455,764
Petroleum and its products	1,638	3,140,335	1,129	2,808,010	1,168	2,935,370
Lights, other than electric	2,183	6,647,458	1,668	2,841,953	1,497	1,788,180
Lightning	2,096	1,407,691	1,903	1,030,148	2,525	2,012,439
Sparks on roofs	553	641,494	557	497,647	442	710,105
Exposure fires	565	1,511,870	695	1,370,467	663	1,654,976
Spontaneous ignition	338	1,656,533	386	1,574,339	377	2,018,170
Incendiarism	454	2,019,602	466	2,895,650	501	3,337,622
Miscellaneous known causes (explosions, fireworks, friction, hot grease or metal, steam or hot water pipes. etc.)	8,022	8,881,661	10,218	10,759,923	10,727	9,679,196
Unknown	12,829	71,990,127	11,758	63,501,818	12,041	64,640,790
Totals	**82,088**	**133,492,277**	**86,919**	**120,258,696**	**84,241**	**124,532,238**

[1] Excludes forest fires and Federal Government property losses.

Subsection 3.—Casualty Insurance Transacted in Canada by Companies under Federal Registration

The various classes of casualty insurance are shown in Table **21**. These figures relate only to companies registered by the Federal Government.

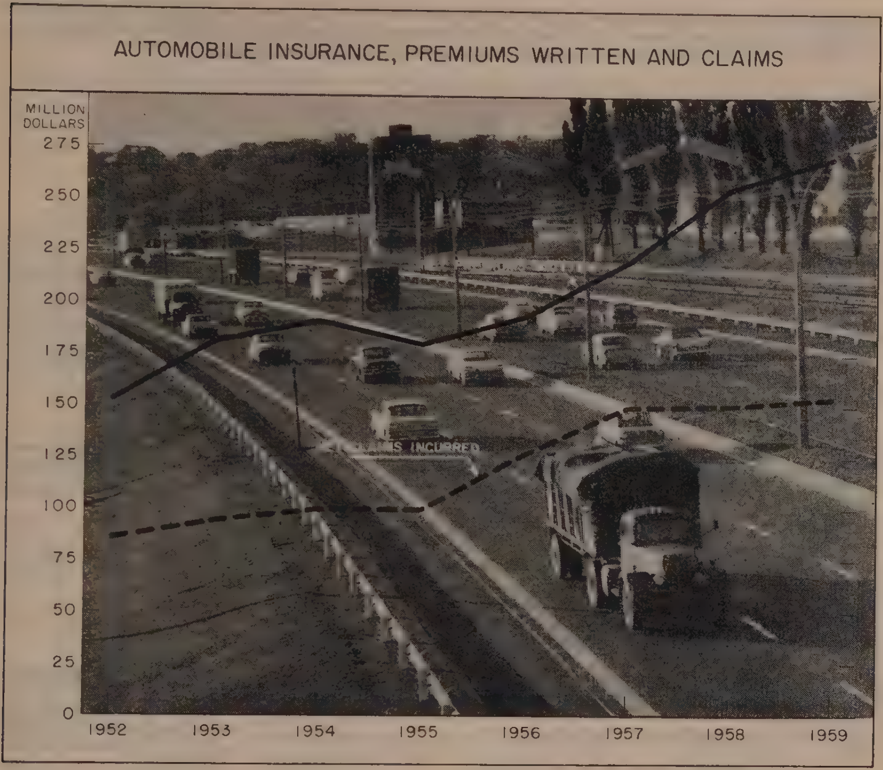
21.—Net Casualty Premiums Written, Premiums Earned and Claims Incurred in Canada, 1959

NOTE.—Excluding marine insurance for which a certificate of registration is not required. Less all reinsurance for Canadian companies and registered or licensed reinsurance only for British and foreign companies.

Class of Business	Premiums Written				Premiums Earned	Claims Incurred
	Canadian Companies	British Companies	Foreign Companies	Total	All Companies	All Companies
	$	$	$	$	$	$
Accident—						
Personal	2,889,396	2,210,471	5,336,512	10,436,379	10,068,397	4,124,145
Public liability	10,391,482	9,631,613	9,071,799	29,094,894	25,651,900	15,276,478
Employers' liability	1,866,748	2,365,306	1,312,349	5,544,403	5,349,972	2,491,348
Combined accident and sickness	61,343,817	1,527,702	90,285,709	153,157,228	152,626,639	108,261,022
Aircraft	197,410	2,449,994	1,410,084	4,057,488	3,750,887	2,005,694
Automobile	119,635,701	64,117,582	87,577,652	271,330,935	265,433,687	153,311,582
Boiler—						
Boiler	2,283,600	643,376	1,250,671	4,177,647	3,905,577	1,017,361
Machinery	817,897	673,051	804,357	2,295,305	2,461,675	966,663
Credit	151,804	—	633,919	785,723	896,808	321,042
Earthquake	4,709	12,185	9,673	26,567	38,972	84
Explosion	18	94	1,001	1,113	3,158	365
Forgery	66,033	9,415	28,567	104,015	80,737	51,871
Guarantee—						
Fidelity	1,867,557	848,604	1,309,663	4,025,824	3,740,753	1,361,962
Surety	3,576,011	793,801	2,328,178	6,697,990	6,233,559	1,477,891
Hail	462,280	275,373	3,196,279	3,933,932	3,933,330	1,993,526
Inland transportation	1,196,651	1,711,069	3,366,520	6,274,240	6,197,375	3,057,820
Livestock	2,626	41,944	38,300	82,870	77,732	37,856
Personal property	9,148,190	13,829,091	18,214,710	41,191,991	36,877,767	22,344,861
Plate glass	958,250	801,238	649,344	2,408,832	2,269,882	1,502,898
Real property	229,804	684,082	535,935	1,449,821	1,398,472	353,493
Sickness	337,320	518,565	944,239	1,800,124	1,840,876	746,330
Sprinkler leakage	38	122	172	332	1,069	−146
Theft	2,528,417	2,073,741	2,457,352	7,059,510	6,278,227	3,867,532
Title	—	—	8,654	8,654	7,842	—
Water damage	—	—	−493	−493	1,395	—
Weather	365	—	11,772	12,137	12,159	8,230
Windstorm	123,455	1,968	29,578	155,001	167,904	128,572
Totals	**220,079,579**	**105,220,387**	**230,812,496**	**556,112,462**	**539,306,751**	**324,708,480**

Subsection 4.—Finances of Companies Transacting Fire and Casualty Insurance under Federal Registration

The financial statistics of Tables **22** to **24** relate to fire and casualty insurance transacted by companies under federal registration. The figures for British and foreign companies apply to their assets, liabilities and operations in Canada only. On the other hand, the assets and liabilities, revenue and expenditure of Canadian companies are given for total business, including business arising out of Canada as well as in Canada.



22.—Total Assets for Fire and Casualty Insurance of Canadian Companies under Federal Registration and Assets in Canada for Fire and Casualty Insurance of British and Foreign Companies under Federal Registration, 1957-59.

Assets	1957	1958	1959
	$	$	$
Canadian Companies (In and Out of Canada)			
Real estate	9,572,647	10,889,616	11,660,494
Mortgage loans and agreements of sale	6,036,592	6,013,358	5,595,807
Bonds, debentures and stocks	309,906,038	332,011,246	361,422,906
Agents' balances and premiums outstanding	33,200,389	37,875,977	38,977,645
Cash	26,075,954	33,657,834	34,290,869
Interest, dividends and rents, due and accrued	2,722,333	3,126,995	3,481,454
Other assets	25,542,145	27,496,777	27,185,645
Totals, Assets of Canadian Companies	**413,056,098**	**451,071,803**	**482,614,820**
British Companies (In Canada)			
Real estate	3,379,370	2,923,560	3,054,965
Mortgage loans and agreements of sale	1,304,004	1,538,221	1,647,452
Bonds, debentures and stocks	196,534,277	219,578,924	240,870,942
Agents' balances and premiums outstanding	24,229,451	28,247,390	27,968,965
Cash	11,301,072	12,952,856	13,025,688
Interest, dividends and rents, due and accrued	1,138,576	1,473,157	1,697,896
Other assets in Canada	3,263,343	4,826,424	6,379,144
Totals, Assets of British Companies (in Canada)	**241,150,093**	**271,540,532**	**294,645,052**

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[1] Includes marine insurance.

22.—Total Assets for Fire and Casualty Insurance of Canadian Companies under Federal Registration and Assets in Canada for Fire and Casualty Insurance of British and Foreign Companies under Federal Registration, 1957-59—concluded.

Assets	1957	1958	1959
	$	$	$
Foreign Companies (In Canada)			
Real estate	4,548,155	4,489,908	4,331,028
Mortgage loans and agreements of sale	47,078	50,089	46,090
Bonds, debentures and stocks	286,551,071	305,729,890	320,614,356
Agents' balances and premiums outstanding	26,307,463	28,692,669	29,715,273
Cash	21,334,417	24,956,406	26,870,696
Interest, dividends and rents, due and accrued	2,428,908	3,227,362	3,665,184
Other assets in Canada	4,741,842	5,335,479	6,092,333
Totals, Assets of Foreign Companies (in Canada)	**345,958,934**	**372,481,803**	**391,334,960**

23.—Total Liabilities for Fire and Casualty Insurance of Canadian Companies under Federal Registration and Liabilities in Canada for Fire and Casualty Insurance of British and Foreign Companies under Federal Registration, 1957-59.

Liabilities	1957	1958	1959
	$	$	$
Canadian Companies[1] (In and Out of Canada)			
Reserve for unsettled claims	85,536,440	90,888,710	100,924,905
Reserve of unearned premiums	114,941,500	127,945,621	138,212,998
Other policy reserves	5,147,122	9,204,449	8,824,317
Sundry items	54,788,419	59,377,234	62,174,862
Investment, contingency or general reserve funds	18,069,048	18,238,546	19,710,798
Totals, Liabilities of Canadian Companies	**278,482,529**	**305,654,560**	**329,847,880**
Capital stock paid	34,582,255	36,084,380	37,286,692
Amounts transferred from other funds	2,414,642	3,217,642	3,759,071
Surplus	97,576,672	106,115,221	111,721,177
	413,056,098	**451,071,803**	**482,614,820**
British Companies (In Canada)			
Reserve for unsettled claims	60,859,862	63,131,240	66,686,958
Reserve of unearned premiums	89,546,191	98,352,621	105,090,796
Other policy reserves	1,594,920	1,640,062	1,784,280
Sundry items	14,600,691	13,999,095	18,668,704
Totals, Liabilities of British Companies (in Canada)	**166,601,664**	**177,123,018**	**192,230,738**
Excess of assets over liabilities in Canada	**74,548,429**	**94,417,514**	**102,414,314**
Foreign Companies (In Canada)			
Reserve for unsettled claims	80,192,028	82,085,798	87,574,582
Reserve of unearned premiums	117,984,449	126,034,285	139,098,015
Other policy reserves	7,539,468	10,294,614	12,654,893
Sundry items	19,231,751	22,354,260	23,564,004
Totals, Liabilities of Foreign Companies (in Canada)	**224,947,696**	**240,768,957**	**262,891,494**
Excess of assets over liabilities in Canada	**121,011,238**	**131,712,846**	**128,443,466**

[1] Includes marine insurance.

24.—Profit and Loss Account of Canadian Companies and Gain or Loss and Other Income in Canada of British and Foreign Companies Transacting Fire and Casualty Insurance under Federal Registration, 1957-59.

Item	1957	1958	1959
	$	$	$
Profit and Loss Account—Canadian Companies (In and Out of Canada)			
Underwriting Gain	**−12,263,911**	**−1,740,766**	**5,597,515**
Add: Interest, dividends and rents	12,622,980	13,945,041	16,068,222
Received from shareholders	4,947,628	1,906,553	3,777,417
Gain in market value of investments	−3,180,625	2,803,698	−8,803,426
Gain on sale of investments	1,429,949	1,461,521	1,007,040
Gains from other sources	2,219,271	2,385,218	5,111,817
Deduct: Investments written down	169,231	380,039	1,444,711
Dividends to policyholders	2,060,606	1,725,482	1,931,104
Income taxes	352,392	2,211,501	4,630,955
Losses from other sources	3,561,101	3,799,925	4,197,826
Dividends to shareholders	2,433,075	2,690,335	3,348,270
Balance, Net Gain	**−2,801,113**	**9,953,983**	**7,205,719**
Gain or Loss and Other Income—British Companies (In Canada)			
Underwriting Gain	**−30,799,476**	**−4,417,433**	**1,074,888**
Deduct: Income taxes	−39,530	334,273	523,366
Net Gain or Loss	**−30,759,946**	**−4,751,706**	**551,522**
Other Revenue—			
Interest, dividends and rents	5,261,709	6,108,554	7,278,128
Sundry income	42,915	76,454	28,742
Gain or Loss and Other Income—Foreign Companies (In Canada)			
Underwriting Gain	**−26,164,561**	**3,870,848**	**10,679,339**
Deduct: Dividends to policyholders and others	3,638,315	3,383,470	3,613,834
Income taxes	−67,266	1,398,953	3,025,987
Net Gain or Loss	**−29,735,610**	**−911,575**	**4,039,518**
Other Revenue—			
Interest, dividends and rents	9,445,113	10,476,421	13,557,229
Sundry income	100,312	321,017	78,181

Section 3.—Government Insurance

Federal Government Insurance

For more than fifty years the Federal Government has operated an annuity service, instituted to assist Canadians to make provision for old age; this service is described below. In addition, various insurance schemes have been adopted in recent years by the Federal Government or co-operatively by the Federal and Provincial Governments. Information on unemployment insurance, health insurance, veterans insurance, export credits insurance, etc., will be found in the appropriate Chapters on Labour, Health and Welfare, Foreign Trade, etc.

Government Annuities.*—The Government Annuities Act (RSC 1952, c. 132) was passed in 1958 and is administered by the Minister of Labour.

A Canadian Government annuity is a fixed yearly income purchased from and paid by the Government of Canada. The annuity is payable in monthly instalments for life, or for life and guaranteed for a period of years. The minimum annuity is $10 and the maximum $1,200 a year or the actuarial equivalent if the annuity is to reduce by the amount of payments under the Old Age Security Act. Annuity contracts may be deferred or immediate. Deferred annuities are purchased by periodic or single premiums. Immediate annuity contracts provide immediate income. Annuities may be arranged to reduce by $55 a month at age 70 to fit in with payments under the Old Age Security Act.

The property and interest of the annuitant are neither transferable nor attachable. In the event of the death of the annuitant before a deferred annuity vests, all money paid is refunded with interest. Provision is made in the Act for group annuity contracts whereby employers may contract for the purchase of annuities on behalf of their employees, or associations on behalf of their members, the purchase money being derived partly from wages and partly from employer contributions or entirely from employer contributions. Group annuity plans now in effect cover a variety of industries and many municipal corporations throughout Canada. Annuities arising from individual contracts may be taxable in either of two ways: (1) if registered under Sect. 79B of the Income Tax Act for tax exemption on premiums, the annuity is fully taxable, or (2) if not registered the annuity is taxable on the interest portion only. Annuities arising from approved pension plans are fully taxable but the employee and the employer are entitled to tax exemption year by year on their annual contributions to the pension plan.

From Sept. 1, 1908, the date of the inception of the system, to Mar. 31, 1960, the total number of annuity contracts and certificates issued, excluding replacements, was 491,344. On the latter date, 81,228 annuities were being paid amounting to $43,403,649 annually and 347,481 deferred annuities were being purchased. The net total amount of purchase money received up to Mar. 31, 1960 was $1,221,836,933.

Up to Mar. 31, 1960, 1,223 corporations, institutions and associations, as compared with 1,195 up to Mar. 31, 1959, had entered into agreements with the Government to purchase annuities. Under these arrangements, 205,201 employees or members were holding certificates for purchase of deferred annuities as compared with 204,853 one year earlier. The number of group certificates issued in the year ended Mar. 31, 1960 was 11,564 as compared with 18,043 for 1958-59.

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* Revised in the Government Annuities Branch, Department of Labour, Ottawa.

25.—Individual Annuity Contracts and Certificates Issued and Net Receipts, Years Ended Mar. 31, 1956-60, with Cumulative Totals for 1909-60

Year Ended Mar. 31—	Individual Contracts Issued	Group Certificates Issued	Total Contracts and Certificates Issued	Net Receipts
	No.	No.	No.	$'000
1909-55	162,710	230,522	393,232	906,262
1956	6,799	15,672	22,471	69,945
1957	5,937	12,476	18,413	64,421
1958	6,701	11,236	17,937	62,149
1959	5,306	18,043	23,349	63,017
1960	4,378	11,564	15,942	56,041
Totals, 1909-60	**191,831**	**299,513**	**491,344**	**1,221,836**

26.—Government Annuity Fund Statements, Years Ended Mar. 31, 1956-60

Item	1956	1957	1958	1959	1960
	$	$	$	$	$
Assets					
Fund at beginning of fiscal year	864,543,038	930,221,101	989,285,939	1,047,641,226	1,105,825,076
Receipts during the year, less payments	65,678,063	59,064,838	58,355,287	58,183,850	51,042,149
Fund at end of fiscal year	930,221,101	989,285,939	1,047,641,226	1,105,825,076	1,156,867,225
Liabilities					
Value of outstanding contracts	930,221,101	989,285,939	1,047,641,226	1,105,825,076	1,156,867,225
Receipts					
Immediate annuities	9,171,329	5,943,037	4,900,533	5,782,225	3,991,755
Deferred annuities	61,405,964	58,982,047	57,779,568	57,783,026	52,533,797
Interest on fund	34,064,769	36,322,665	38,448,256	40,710,603	42,805,366
Amount transferred to maintain reserve	—	—	1,184,467	157,565	189,340
Totals, Receipts	**104,642,062**	**101,247,749**	**102,312,824**	**104,433,419**	**99,520,258**
Payments					
Payments under vested annuity contracts	34,498,070	36,963,652	39,056,390	41,177,423	43,286,202
Return of premiums with interest	3,033,205	3,252,738	3,664,920	3,915,022	4,114,357
Return of premiums without interest	1,317,682	1,177,408	1,225,048	1,152,124	1,075,438
Unclaimed annuities transferred to Consolidated Revenue Fund	—	29,398	11,179	5,000	2,112
Surplus transferred to Consolidated Revenue Fund	115,042	759,715	—	—	—
Totals, Payments	**38,963,999**	**42,182,911**	**43,957,537**	**46,249,569**	**48,478,109**

27.—Numbers and Values of Annuity Contracts, as at Mar. 31, 1959 and 1960

Classification	1959			1960		
	Contracts	Amount of Annuities	Value at Mar. 31 of Contracts in Force	Contracts	Amount of Annuities	Value at Mar. 31 of Contracts in Force
	No.	$	$	No.	$	$
Vested ordinary	37,657	15,865,690	133,790,685	39,466	16,914,985	141,079,786
Vested guaranteed	32,216	18,389,782	204,498,350	32,244	18,583,509	205,080,281
Vested last survivor	4,021	2,065,504	26,215,479	3,883	2,029,826	25,531,250
Vested reducing at age 70	5,092	5,176,073	38,267,693	5,635	5,875,329	42,632,768
Deferred	343,957	[1]	703,052,869	347,481	[1]	742,543,140
Totals	**422,943**	**41,497,049**	**1,105,825,076**	**428,709**	**43,403,649**	**1,156,867,225**

[1] Undetermined.

Provincial Government Insurance

Saskatchewan.—The Saskatchewan Government Insurance Office, a Crown corporation established by the Saskatchewan Government Insurance Act, 1944, commenced business in May 1945. It deals in all types of insurance other than sickness and life. The aim of the legislation is to provide residents of the province with low-cost insurance designed for their particular needs. Rates are based on loss experience in Saskatchewan only and the surplus is invested, to the extent possible, within the province. Premium income for 1960 amounted to $8,702,013 and earned surplus to $432,602. The total amount made available to the Government of Saskatchewan since the beginning of government insurance operations in 1945 to Dec. 31, 1960, was $3,883,235. Assets at the latter date were $17,226,941 of which more than $10,000,000 were invested in bonds and debentures issued by Saskatchewan schools, municipalities and hospitals. Over 600 independent insurance agents sell government insurance throughout Saskatchewan.

The Automobile Accident Insurance Act, which became effective Apr. 1, 1946, is administered by the Saskatchewan Government Insurance Office. It establishes a compulsory automatic insurance plan designed to provide a reasonable minimum of compensation for losses arising from motor vehicle accidents regardless of fault. It also provides public liability insurance, with limits of $10,000/$20,000 for bodily injury and $5,000 for property damage, as well as comprehensive and collision coverage subject to a $200 deductible for private passenger cars. Rates vary from $4 a year for trucks to $40 for late-model private passenger cars, and also vary for other types of motor vehicles depending on size and usage. From the inception of the Act in 1946 to Dec. 31, 1960, more than $45,000,000 were paid in claims.

The Saskatchewan Government Insurance Office, under contract with the Saskatchewan Department of Natural Resources, offers insurance to farmers covering damage to unharvested crops by certain wildlife such as ducks, geese, sandhill cranes, deer, elk, bear and antelope.

Information regarding the operation of the Saskatchewan Government Insurance Office or the Automobile Accident Insurance Act may be obtained from the Librarian, The Saskatchewan Government Insurance Office, Regina, Sask.

Alberta.—Provincial government insurance in Alberta, coming within the purview of the Alberta Insurance Act, relates (1) to the Alberta General Insurance Company, in which the entire business of the fire branch of the Alberta Government Insurance Office was vested by the Legislature on Mar. 31, 1948, and (2) to the Life Insurance Company of Alberta, which was constituted on the same date to take over the life branch of the Alberta Government Insurance Office. Each company is administered by a separate board of directors. The Lieutenant-Governor in Council appoints the members to the respective boards but the charter of the Life Insurance Company of Alberta provides for the election of two policyholder directors. While both companies are Crown corporations, they are not entitled to the usual immunities of the Crown, since they may sue and be sued in any court of competent jurisdiction.

A variety of agencies in Alberta offer forms of prepaid protection corresponding to insurance but the nature of the enabling legislation governing these plans emphasizes the fact that they do not constitute insurance. Because such exemptions are specifically provided by the insurance laws of the province, reference to these plans is necessary only to make it clear that they do not come within the scope of the Alberta Insurance Act. It should be noted that the Alberta Hail Insurance Act is administered by the Provincial Treasurer but none of the provisions of the Alberta Insurance Act apply to the Alberta Hail Insurance Board.

Further information on provincial insurance matters may be obtained from the Superintendent of Insurance, Department of the Provincial Secretary, Edmonton, Alta.

CHAPTER XXV.—DEFENCE OF CANADA

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—THE ARMED SERVICES AND DEFENCE RESEARCH*

Section 1.—The Department of National Defence

The Minister and Associate Minister of National Defence exercise control over and management of the Canadian Armed Forces, the Defence Research Board and other matters relating to national defence. Under their direction the three Chiefs of Staff are responsible for the control and administration of their respective Services and the Chairman of the Defence Research Board is responsible for research and development in defence matters. The Chairman of the Chiefs of Staff Committee is responsible to the Minister for ensuring that all matters of joint defence and defence policy, in its widest sense, are carefully examined and co-ordinated before decisions are made.

The civilian administration of the Department is organized under the Deputy Minister and is constituted on a functional basis. The Deputy Minister maintains a continuing review and control over the financial aspects of operational policy, logistics, and personnel and administration. The Deputy Minister is assisted by an Associate Deputy Minister and four Assistant Deputy Ministers each of whom administers a division of the Deputy Minister's branch responsible for matters of: administration and personnel; construction, engineering and properties; finance; and supply. Also responsible to the Deputy Minister are: the Controller General of Inspection Services, the Judge Advocate General, the Chief Secretary, and the Director of Public Relations.

A number of committees meet at regular intervals to consider and advise on joint issues. These include:—

(1) **Defence Council.**—Composed of the Minister of National Defence (Chairman), the Associate Minister (Vice-Chairman), the Parliamentary Secretary, the Deputy Minister, the Chairman of the Chiefs of Staff Committee, the three Chiefs of Staff, the Chairman of the Defence Research Board and the Associate Deputy Minister; its purpose is to advise the Minister on administrative and other matters.

(2) **Chiefs of Staff Committee.**—Composed of the Chairman of the Chiefs of Staff, the three Chiefs of Staff and the Chairman of the Defence Research Board. The Deputy Minister of National Defence attends regularly and the Secretary to the Cabinet and the Under Secretary of State for External Affairs attend when required. The purpose of the Committee is to maintain a continuous review of all operational problems; sub-committees consider various aspects of these problems and report to the parent committee.

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* Prepared in the Office of the Deputy Minister, Department of National Defence, Ottawa.

(3) **Personnel Members Committee.**—Composed of the Chief of Naval Personnel, the Adjutant-General, the Air Member for Personnel, the Assistant Deputy Minister (Administration and Personnel), the Assistant Deputy Minister (Finance) and a representative of the Chairman of the Defence Research Board. The purpose of the Committee is to examine personnel problems of the three Services with the general aim of achieving uniform personnel policies; sub-committees consider various aspects of personnel problems and report to the parent committee.

(4) **Principal Supply Officers Committee.**—Composed of the Chief of Naval Technical Services, the Quartermaster-General, the Air Member for Technical Services, the Assistant Deputy Minister (Requirements) and a representative of the Chairman of the Defence Research Board. The purpose of the Committee is to consider logistical problems; sub-committees consider various aspects of these problems and report to the parent committee.

Defence Supply Committee.—An interdepartmental committee composed of the Deputy Ministers of National Defence and of Defence Production and the senior military and civilian supply officers of the two Departments has been established to review interdepartmental procurement and production problems and consider various policy aspects of the procurement of ammunition, armament, aircraft, etc. Eleven panels consider various aspects of these problems and report to the parent committee.

Canada–United States Committee on Joint Defence.—Composed of: for Canada, the Secretary of State for External Affairs, the Minister of National Defence and the Minister of Finance; for the United States, the Secretary of State, the Secretary of Defense and the Secretary of the Treasury; together with such appropriate Cabinet Members as either Government may designate from time to time as the need arises.

The function of this Committee is to consult periodically on any matters affecting the joint defence of Canada and the United States; to exchange information and views at the Ministerial level on problems that may arise, with a view to strengthening further the close and intimate co-operation between the two Governments on joint defence matters; and to report to the representative Governments on such discussions in order that consideration may be given to measures deemed appropriate and necessary to improve defence co-operation. The Committee meets at least once a year or as may be considered necessary by the two Governments. Meetings normally alternate between Canada and the United States with the host country providing the chairman.

Liaison Abroad.—The Chairman of the Chiefs of Staff, who is the Canadian military representative in the North Atlantic Treaty Organization, is responsible for co-ordinating all NATO military matters and acts as a military adviser to Canadian NATO delegations. For purposes of liaison and the furtherance of international co-operation in defence, Canada also maintains: (1) the Canadian Joint Staff (London) representing the three Services and the Defence Research Board in the United Kingdom, the chairman of which is the principal military adviser to the Canadian High Commissioner in London, the principal military adviser to the Permanent Canadian Delegate to the NATO Council and the Canadian National Military Representative to SHAPE; (2) the Canadian Joint Staff (Washington) representing the three Services and the Defence Research Board in the United States, the chairman of which is the principal military adviser to the Canadian Ambassador in Washington, the Canadian National Liaison Representative to SACLANT Headquarters and the Canadian member of the NATO Military Committee in Permanent Session; and (3) Service Attachés in various countries throughout the world. In addition, a number of defence matters of concern to both Canada and the United States are considered by the Permanent Joint Board on Defence.

Mutual Aid.—Canada's contributions to NATO are outlined on p. 141.

Rates of Pay and Allowances.—The entire pay structure for comparable ranks in the different Services is on a uniform basis. Monthly rates for pay and allowances effective Oct. 1, 1960 are given in Table **1**.

1.—Monthly Rates of Pay and Allowances for the Canadian Armed Forces, Effective Oct. 1, 1960

Royal Canadian Navy	Canadian Army	Royal Canadian Air Force	Basic Pay	Progressive Pay			Group Pay for Tradesmen and Specialists						Subsistence Allowance		Ration Allowance	Marriage Allowance	Separated Family's Allowance (personnel not in married quarters and with children)	
				Years in Rank			Group						Personnel not in Receipt of Marriage Allowance	Personnel in Receipt of Marriage Allowance			In Receipt of Subsistence Allowance	Not in Receipt of Subsistence Allowance
				3	6	9	1	2	3	3A	4	4A						
			$										$	$	$	$	$	$
Ordinary Seaman (under 17 years)	Private recruit (under 17 years)	Aircraftman 2 (under 17 years)	56	—	—	—	—	—	—	—	—	—	65	—	30	—	—	—
Ordinary Seaman (entry)	Private (recruit)	Aircraftman 2	108	—	—	—	12	30	54	63	72	90	65	100	30	30	65	100
Ordinary Seaman (trained)	Private (trained)	Aircraftman 1	115	—	—	—	12	30	54	63	72	90	65	100	30	30	65	100
Able Seaman	Private (higher rate)	Leading Aircraftman	134	20	22	—	12	30	54	63	72	90	65	100	30	30	65	100
—	Lance-Corporal	—	181	—	—	—	12	30	54	63	72	90	65	100	30	30	65	100
Leading Seaman	Corporal	Corporal	187	3	3	3	12	30	54	63	72	90	65	100	30	30	65	100
Petty Officer 2	Sergeant	Sergeant	211	5	5	5	12	30	54	63	72	90	75	105	30	30	75	105
Petty Officer 1	Staff Sergeant	Flight Sergeant	235	5	5	5	12	30	54	63	72	90	85	105	30	30	85	105
Chief Petty Officer 2	Warrant Officer 2	Warrant Officer 2	272	5	5	5	12	30	54	63	72	90	85	105	30	30	85	105
Chief Petty Officer 1	Warrant Officer 1	Warrant Officer 1	304	5	5	5	12	30	54	63	72	90	95	110	30	30	95	110

1.—Monthly Rates of Pay and Allowances for the Canadian Armed Forces, Effective Oct. 1, 1960—concluded

Royal Canadian Navy	Canadian Army	Royal Canadian Air Force	Basic Pay	Pro-gressive Pay			Group Pay for Tradesmen and Specialists						Subsistence Allowance		Ration Allow-ance	Mar-riage Allow-ance	Separated Family's Allowance (personnel not in married quarters and with children)	
				Years in Rank			Group						Personnel not in Receipt of Marriage Allowance	Personnel in Receipt of Marriage Allowance			In Receipt of Sub-sistence Allowance	Not in Receipt of Sub-sistence Allowance
				3	6	9	1	2	3	3A	4	4A						
			$										$	$	$	$	$	$
ROTP Cadet	ROTP Cadet	ROTP Cadet	63	—	—	—	—	—	—	—	—	—	65	—	30	—	—	—
Midshipman	—	—	154	—	—	—	—	—	—	—	—	—	75	110	30	40	75	110
Acting Sub-Lieutenant	Second Lieutenant	Pilot Officer	225	—	—	—	—	—	—	—	—	—	75	110	30	40	75	110
Sub-Lieutenant	Lieutenant	Flying Officer	321	35	15	—	—	—	—	—	—	—	90	125	30	40	90	125
Commissioned Officer	Officer commis-sioned from S/Sgt or above	Officer commis-sioned from F/Sgt or above	393	20	20	20	—	—	—	—	—	—	90–95[1]	110–125[1]	30	40	90–95[1]	110–125[1]
Lieutenant	Captain	Flight Lieutenant	393	30	30	30	—	—	—	—	—	—	95	125	30	40	95	125
Lieutenant-Commander	Major	Squadron Leader	510	30	30	30	—	—	—	—	—	—	113	135	30	40	113	135
Commander	Lieutenant-Colonel	Wing Commander	639	35	35	35	—	—	—	—	—	—	126	150	30	40	126	150
Captain	Colonel	Group Captain	809	35	35	—	—	—	—	—	—	—	139	165	30	40	139	165
Commodore	Brigadier	Air Commodore	1,114	—	—	—	—	—	—	—	—	—	153	180	30	40	153	180
Rear-Admiral	Major-General	Air Vice-Marshal	1,265	—	—	—	—	—	—	—	—	—	165	195	30	40	165	195

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[1] Depending on rank on promotion.

The allowances shown in Table 1 are explained briefly as follows.

Subsistence Allowance.—This allowance is granted whenever rations and quarters are not provided. A married man living with his family uses his subsistence allowance for their maintenance as well as his own.

Ration Allowance.—A ration allowance is granted when quarters are available but rations are not provided. It is not payable concurrently with subsistence allowance.

Marriage Allowance.—The amount of this allowance is $30 a month for men and $40 a month for officers, subject to a reduction of $10 a month where permanent married quarters are occupied or $2.50 a month where temporary married quarters are occupied. All ranks may draw this allowance upon marriage provided the initial training period has been completed and the age of 21 years has been attained by men and 23 years by officers.

Separated Family's Allowance.—An officer or man while separated from his dependants for any of various reasons (*i.e.*, movement of dependants prohibited, illness of dependants, lack of suitable accommodation), on being moved other than temporarily may be entitled to separated family's allowance at a rate and for a period depending on circumstances (*i.e.*, rank, reason for separation, whether or not he has children, whether or not his family is accommodated in married quarters, whether or not he is provided with quarters and rations). The rates listed are the maximum.

In addition to the above, *Foreign Allowances* of various kinds are granted to officers and men posted for duty outside Canada to compensate for additional living expenses or hardships incurred; these vary with rank, appointment and location. *Isolation Allowances* are granted to officers and men serving at specified isolated posts in Canada at rates depending upon location and circumstances. *Outfit Allowances and Clothing Credits* are as follows: Officers receive a single payment of $450 on appointment and Warrant Officers Class I, $270; men receive a free issue of clothing when they join and thereafter a monthly clothing credit or allowance of $7, Navy Petty Officer 1st class and above $9, and women $8. An *Aircrew Allowance* of $75 a month is paid to an officer or man undergoing flying training. For qualified aircrew this allowance may be increased to $150, depending on rank, if filling an appointment requiring active and continuous flying duties and to $100, depending on rank, for maintaining proficiency. *Submarine Allowance* is granted an officer or man undergoing submarine training or filling an appointment in a submarine; the allowance varies from $65 to $115 a month depending on rank. An officer or man actively engaged or undergoing training as a parachutist or on flying or submarine duty and not entitled to aircrew allowance or submarine allowance is paid a *Risk Allowance* at the rate of $30 a month. *Medical and Dental Officers* are granted extra allowances according to rank.

Subsection 1.—The Royal Canadian Navy

Role and Organization.—The role of the Royal Canadian Navy is to defend Canada and to contribute to the collective defence of the North Atlantic Treaty Organization (NATO) area against attack from the sea. In addition, the RCN may be required to assist in the support of the United Nations, as directed by the Canadian Government. To meet its role, the RCN maintains, in a state of readiness, an effective force of anti-submarine ships and aircraft with up-to-date equipment and logistic support.

The Royal Canadian Navy comes under the central authority of the Chief of Naval Staff at Naval Headquarters in Ottawa. The Flag Officer Atlantic Coast, at Halifax, N.S., and the Flag Officer Pacific Coast, at Esquimalt, B.C., exercise operational and administrative command of ships and establishments within the Atlantic and Pacific Coast Commands. The Flag Officers also hold the additional appointments of Maritime Commander Atlantic and Maritime Commander Pacific, respectively. As such, each is responsible for anti-submarine operations involving RCN and RCAF forces in his Command.

The 21 Naval Divisions of the RCN (Reserve) come under the over-all command of the Commanding Officer Naval Divisions, with headquarters at Hamilton, Ont. There are naval missions in London, England, and Washington, U.S.A., to maintain liaison with the Royal Navy and the United States Navy. As a result of Canada's NATO commitments (see p. 141), officers of the Royal Canadian Navy serve on the staffs of: the Supreme Allied Commander, Atlantic, at Norfolk, Va., in the United States; the Commander-in-Chief, Eastern Atlantic Area, at Northwood in the United Kingdom; and the Commander-in-Chief, Western Atlantic Area, at Norfolk, Va. The Flag Officer Atlantic Coast holds the NATO appointment of Commander, Canadian Atlantic Sub-Area.

The strength of the RCN at Mar. 31, 1961, was 20,655 officers, men and women in the regular force and 3,672 in the reserve force.

Operations at Sea, 1960-61.—In 1960 the Royal Canadian Navy celebrated its 50th anniversary. In the same year, the Navy reached its highest peacetime strength, with more than one-half its personnel serving afloat in 62 ships in commission on both coasts. The percentage of personnel serving afloat is among the highest of any navy in the world.

To assist in anti-submarine training, the Navy acquired in 1961 a submarine from the United States Navy to be based on the West Coast. The former USS *Burrfish*, the submarine was renamed HMCS *Grilse*. Seven ships are being built in Canadian yards. They consist of six Mackenzie class destroyer escorts and a tanker supply ship. The Mackenzie class is a further development of the well-known Restigouche class destroyer escort.

On the Atlantic in 1960, RCN ships participated with those of other NATO nations in large-scale exercises and also held national exercises of their own. In the Pacific, Canadian ships carried out an intensive training program which included exercises with the United States Navy. In the course of the operational and training cruises, ships of the Atlantic and Pacific Commands in 1960-61 ranged far afield, visiting ports in Australia, Peru, Chile, Panama Canal Zone, Galapagos Islands, Mexico, New Zealand, Okinawa, Japan, Hong Kong, Hawaii, Alaska, Greenland, the United Kingdom, Portugal, Nigeria, Ghana, Sierra Leone, Bermuda, the West Indies and the United States.

Reorganization of the Navy's personnel structure continued. On-the-job training was stepped up to maintain and increase the seagoing strength, and a new promotion system emphasized merit and equalized opportunities for all ranks.

Training.—The major shore training establishments are HMCS *Stadacona* at Halifax, N.S., HMCS *Naden* at Esquimalt, B.C., HMCS *Cornwallis* near Digby, N.S., HMCS *Shearwater* near Dartmouth, N.S., HMCS *Hochelaga* near Montreal, Que., and HMCS *Gloucester* near Ottawa.

Training facilities at *Stadacona*, *Naden* and *Shearwater* have been reorganized as Fleet Schools, with provision for general and specialized training. Under the Training Officer at *Stadacona* are five Divisions: Weapons, Engineering, Operational, Academic and Communications. At *Naden* the Divisions are: Operations and Weapons, Engineering, Academic, Medical and Music; and *Shearwater* has an Aircrew Division, Ground Crew Division, a Meteorological Division and a further division to be added later.

New equipment included a tactical trainer at the Joint Maritime Warfare School, Halifax, and a flight simulator for the RCN Air Station.

The New Entry Training Division is located at HMCS *Cornwallis* and the new-entry or re-entry training course is 15 weeks in duration. During 1960, 1,892 men and women, including apprentices, took basic training. HMCS *D'Iberville* at Quebec City gave all French-speaking new-entry personnel a basic course in English and preliminary training in seamanship and other professional naval subjects. After completing the course at *D'Iberville*, these new entries joined classes at *Cornwallis*. *D'Iberville* is to be paid off in 1961 and the school moved to HMCS *Hochelaga* at Montreal. Courses in the supply trades are conducted in *Hochelaga*, as are management and logistic courses for both officers and civilian personnel. Communications training is carried out at *Cornwallis* and *Gloucester*.

The main source of officers for the Royal Canadian Navy is the Regular Officer Training Plan which provides selected high school graduates with subsidized degree courses at the Canadian Services Colleges and Canadian universities. In 1960, 35 ROTP cadets who graduated from the Royal Military College of Canada or Canadian universities were promoted to Sub-lieutenant.

Under the *Venture* plan, introduced in 1954, young men are enrolled as cadets on a seven-year appointment, with the opportunity to apply for a permanent commission. In August 1960, there were 70 cadets under training, including five Belgians. Thirty-five cadets graduated and were promoted to the rank of Acting Sub-lieutenant. Of these, 17 went to flying training with the RCAF to obtain their wings before taking advanced flying training with the RCN; 18 went to sea as Sub-lieutenants.

A University Naval Training Division program is conducted to give instruction to university students with the object of providing well-trained junior officers for the RCN (Reserve) and RCN. The training period is three years and the cadets are required to complete three winter-training periods, two summer periods and certain specified courses. In July 1960, there were 530 UNTD cadets at 26 Canadian universities and colleges. Most of these received training during the summer in ships and establishments of the RCN.

Royal Canadian Navy (Reserve).—The recruiting and training of officers and men of the Royal Canadian Navy (Reserve) is conducted mainly through 21 Naval Divisions across Canada under the over-all command of the Commanding Officer Naval Divisions, with headquarters at Hamilton, Ont. Naval Divisions are established in the following centres:—

St. John's, Nfld., HMCS *Cabot*
Charlottetown, P.E.I., HMCS *Queen Charlotte*
Halifax, N.S., HMCS *Scotian*
Saint John, N.B., HMCS *Brunswicker*
Quebec, Que., HMCS *Montcalm*
Montreal, Que., HMCS *Donnacona*
Toronto, Ont., HMCS *York*
Ottawa, Ont., HMCS *Carleton*
Kingston, Ont., HMCS *Cataraqui*
Hamilton, Ont., HMCS *Star*
Windsor, Ont., HMCS *Hunter*
London, Ont., HMCS *Prevost*
Port Arthur, Ont., HMCS *Griffon*
Winnipeg, Man., HMCS *Chippawa*
Regina, Sask., HMCS *Queen*
Saskatoon, Sask., HMCS *Unicorn*
Calgary, Alta., HMCS *Tecumseh*
Edmonton, Alta., HMCS *Nonsuch*
Vancouver, B.C., HMCS *Discovery*
Victoria, B.C., HMCS *Malahat*
Prince Rupert, B.C., HMCS *Chatham*

Naval Divisions, commanded by Reserve officers, provide both basic and specialized training for officers and men of the RCN(Reserve). The Great Lakes Training Centre at Hamilton conducts new-entry reserve training afloat during the summer months.

Royal Canadian Sea Cadets.—Royal Canadian Sea Cadets, sponsored by the Navy League of Canada and supervised by the RCN, consisted of 159 authorized corps in 1960. These were divided into seven Sea Cadet areas, supervised by 16 naval officers, responsible to the Commanding Officer Naval Divisions. Instruction is carried out by RCSC officers. Two RCSC training establishments—*Acadia* on the East Coast and *Quadra* on the West Coast—accommodated officers and cadets for two-week training periods in 1960. In addition, Sea Cadets received eight-week training courses at the two establishments. Sea experience was provided for Cadets throughout the year in various types of ships of the RCN. The strength of the corps at the end of 1960 was 1,100 Sea Cadet officers and 9,700 Sea Cadets.

Subsection 2.—The Canadian Army

Organization.—Army Headquarters at Ottawa is organized into three separate Branches. The General Staff Branch deals with all matters affecting the fighting efficiency of the Army, the Adjutant-General Branch deals with all problems affecting the soldier as an individual and the Quartermaster-General Branch is responsible for supply. The senior appointment at Army Headquarters is the Chief of the General Staff who, through the Heads of the three Branches, directs all activities of the Canadian Army. For command and control, Canada is divided into Commands and Areas with Headquarters as follows:—

Command	*Headquarters*	*Area and Headquarters*
Eastern Command	Halifax, N.S.	(1) New Brunswick Area, Fredericton, N.B.
		(2) Newfoundland Area, St. John's, Nfld.
Quebec Command	Montreal, Que.	(3) Eastern Quebec Area, Quebec, Que.
Central Command	Oakville, Ont.	(4) Eastern Ontario Area, Kingston, Ont.
		(5) Central Ontario Area, Oakville, Ont.
		(6) Western Ontario Area, London, Ont.
Western Command	Edmonton, Alta.	(7) British Columbia Area, Vancouver, B.C.
		(8) Alberta Area, Edmonton, Alta.
		(9) Saskatchewan Area, Regina, Sask.
		(10) Manitoba Area, Winnipeg, Man.

The Canadian Army comprises the Canadian Army (Regular) and the Reserves. The Canadian Army (Regular) consists of a field force of four Infantry Brigade Groups, static, training, logistic support and headquarters units. One of the Infantry Brigade Groups is in Europe with the NATO Force and is under command of the Supreme Allied Commander in Europe. The Reserves include the Canadian Army (Militia), the Regular Reserve, the Supplementary Reserve, the Canadian Officers' Training Corps, the Cadet Services of Canada and the Reserve Militia. Additional to but not an integral part of the Canadian Army are the Services Colleges, officially authorized cadet corps, rifle associations and clubs.

The strength of the Canadian Army (Regular) at Mar. 31, 1961 was 48,051 officers and men and the strength of the Canadian Army (Militia) was 43,229.

Operations in 1960.—In fulfilment of military obligations under the North Atlantic Treaty, Canada has continued to provide ground forces for the defence of Western Europe. The 4th Canadian Infantry Brigade Group, the major units of which are the 8th Canadian Hussars (Princess Louise's), the 3rd Regiment Royal Canadian Horse Artillery, the 1st Battalion, The Canadian Guards, the 1st Battalion, The Queen's Own Rifles of Canada, and the 1st Battalion, The Black Watch (Royal Highland Regiment) of Canada, constituted the Canadian Army contribution to NATO at the end of the year. The Headquarters of the Brigade Group is at Soest, and married quarters are located in the vicinity of Soest, Werl, Hemer and Iserlohn.

The Canadian Army continued to provide a force of approximately 870 officers and men to the United Nations Emergency Force in the Middle East. Their task is the patrolling of a sector of the Egypt–Israel Armistice Demarcation Line, and the provision of communication, supply, transport and workshop services to the Force. Canadian Army contributions to United Nations commissions included 25 officers employed in Kashmir, Palestine and Korea.

As a result of Canadian participation in the International Commissions for Supervision and Control in Viet Nam and Cambodia, the Canadian Army continued to provide approximately 61 officers and men for truce supervisory duties in Indo-China. In addition, 30 officers and men were warned for duty in Laos when it appeared that reactivation of the Commission for Laos was imminent. Late in April 1961, the Commission was reactivated and the advance party left for New Delhi.

In August 1960 Canada sent a force to the Congo for service with the United Nations Congo Force. This force is a signals unit approximately 280 strong and includes a number of staff officers and other personnel for employment at HQ ONUC in Leopoldville. The majority of the signals unit is also in Leopoldville, but detachments provide UN communications at Headquarters of UN Territorial Commands in the Congo.

Canada, as a member of the United Nations, may be called on to provide at short notice military forces for service in support of the United Nations. An infantry battalion has been specially trained and equipped for operations of this nature in any part of the world.

The Army has assumed certain responsibilities for national survival, including attack warning, nuclear detonation and fallout reporting, re-entry operations into damaged areas and areas subjected to heavy fallout, and emergency communications.

Training.—The policy of training is determined at Army Headquarters. General Officers Commanding Commands implement the training policies within their Commands except for training conducted at Army and corps schools that are under the direct supervision of Army Headquarters. During 1960 the basic training of 4,495 recruits and the corps training of officers and men of the Canadian Army (Regular) were carried out at regimental depots, units and corps schools, and 7,019 personnel attended courses at the schools of instruction. Promotion qualification examinations consisting of written and practical tests were held to qualify Regular and Militia officers for the ranks of Captain and Major; 56 candidates passed qualification examinations for selection to attend the Canadian Army Staff College and 16 passed the entrance examination for the Royal Military College of Science. A training program was conducted during the winter months for all Regular officers to further their professional knowledge. Militia Staff Course examinations were conducted for Militia officers to qualify Captains and Majors for command and staff appointments. Qualifying courses for Junior NCO's were conducted under General Officers Commanding Commands. Senior NCO courses were conducted at corps schools in accordance with training standards.

French and English language training, which is available to all ranks of the Canadian Army, was conducted by Commands and AHQ. The R22eR Depot (Language Wing) conducted six-month French language courses for English-speaking officers and NCO instructors. A number of French-speaking potential NCO's also received English language training.

Officers from the RCN and RCAF as well as officers from the United States, the United Kingdom, Australia, Pakistan, India, Germany, Belgium, Turkey, Norway, France and Italy attended courses at Canadian Army schools of instruction.

Trade and specialty training is given at corps schools and units. Where feasible, the facilities of civilian schools are used to supplement training at Army establishments. Training is conducted in accordance with the appropriate training standard for each trade or specialty. When required by technical developments in the Army, trades are revised and new trades are introduced. Trades relating to aircraft maintenance have been introduced in keeping with the decision that the Army will use certain aircraft.

The apprentice training program inaugurated in September 1952 is designed to train selected young men as soldier tradesmen and to give them a background for advancement to senior non-commissioned ranks in the Army. A high entry standard has been set to ensure that the prospective soldier apprentice will be capable of absorbing trade and academic training and also of developing the leadership qualities essential in senior NCO's. During 1960 an additional 502 apprentices were enrolled and 46 civilian teachers were employed to provide academic instruction for about 967 apprentice soldiers. Academic credits are obtained from the educational authorities of the province where the training is conducted. Apprentices receive training as technical assistants (Field) surveyors RCA, field engineers, radio and telegraph operators, radio equipment technicians, teletype and cipher equipment technicians, teletype operators, linemen, transport operators, administrative clerks, storemen, clerks accounting, storemen clerks, radio technicians, electrical mechanics, vehicle mechanics tracked, weapons technicians and instrument technicians. In addition, apprentices enrolled in the Royal Canadian Engineers may, on completion of the apprentice training, be trained as carpenters, masons, painters, electricians, draughtsmen (architectural and engineering), training aids artists and driver radio operators. A balanced training program is designed to stimulate the interest of the apprentice. Military, trade, academic and recreational training is integrated. Separate messing, canteen and sleeping arrangements are provided for apprentices.

The training of the Defence of Canada Force continued throughout 1960. Airborne continuation training was carried out by each unit in conjunction with unit exercises. Defence of Canada Force units carried out exercises during the winter under cold weather conditions. Parachute and air supply courses were conducted at the Canadian Joint Training Centre at Rivers, Man., and courses in Arctic training at Fort Churchill, Man. Collective training for units in Canada was carried out during the summer months at Camp Gagetown, Camp Petawawa and Camp Wainwright. All arms training comprised subunit and unit training and culminated in exercises at the Brigade Group level.

The Reserves.—Funds were provided to permit an average of 40 days of training for all ranks, plus up to 70 days of training for key personnel in the Militia. This included seven days of summer training for selected personnel by attachment to Regular Army units, attendance at command National Survival camps and in-job training at headquarters. During the summer, 17,215 all ranks including members of the Canadian Women's Army Corps and Young Soldiers participated in this training.

The Regular Officer Training Plan (ROTP).—The Regular Officer Training Plan is in effect at the three Canadian Services Colleges and at all Canadian universities and affiliated colleges that have contingents of the COTC. The purpose of the Plan is to train selected students for commissions in the Canadian Army (Regular). Students enrol in the Canadian Army (Regular) with a special rate of pay; tuition and essential fees are paid and grants are given for books and instruments needed for study. During the year ended Mar. 31, 1961, 110 of these sponsored students graduated and were commissioned in the Canadian Army (Regular). Training consists of military studies, drill and physical training during the academic year; the summer term is devoted to practical training at military establishments.

The Canadian Officers' Training Corps (COTC).—In addition to the Regular Officer Training Plan, units of the Canadian Officers' Training Corps are maintained at Canadian universities to produce primarily, from among university undergraduates, officers for the reserve components of the Army. University graduates who have been members of the Canadian Officers' Training Corps are also eligible for commissions in the Canadian Army (Regular). Members of the COTC undertake the same training as members of the ROTP. During the year ended Mar. 31, 1961, seven who had trained with the COTC were awarded commissions in the Canadian Army (Regular).

Army Cadets.—As at Mar. 31, 1961, the program for Royal Canadian Army Cadets involved 2,126 Cadet Services of Canada officers and civilian instructors and 65,200 cadets in 484 corps. In 1960, a total of 5,008 selected cadets attended trades and specialist seven-week summer camps at Aldershot, N.S., Farnham, Que., Ipperwash and Camp Borden, Ont., and Vernon, B.C.; 777 cadets attended two-week Junior Leader camps at

Aldershot, N.S., and Clear Lake, Man. The National Cadet Camp at Banff, Alta., was conducted for 230 Master and First Class cadets. A total of 742 Cadet Services of Canada officers and civilian instructors was employed at or attended cadet camps under instruction.

Subsection 3.—The Royal Canadian Air Force

Organization.—The RCAF is controlled from Air Force Headquarters at Ottawa, which is responsible for planning, policy and administration of the Regular and Reserve components of the RCAF. The Headquarters organization comprises four major Divisions —plans and operations, technical services, personnel, and resources control. On Mar. 31, 1961, the major RCAF formations and their Headquarters locations were as follows:—

Formations	*Headquarters*
Air Defence Command	St. Hubert, Que.
5 Air Division	Vancouver, B.C.
1 Air Division	Metz, France
Air Transport Command	Trenton, Ont.
Air Materiel Command	Rockcliffe, Ont.
Maritime Air Command	Halifax, N.S.
Training Command	Winnipeg, Man.

The organization included 29 flying squadrons of the RCAF Regular and 11 flying squadrons of the RCAF Auxiliary. The Auxiliary squadrons performed an emergency and rescue role. Nine of the Regular squadrons contributed to the air defence of the Canada–United States regions; 12 squadrons were assigned to the air defence of Western Europe; four squadrons were required for RCAF transport operations at home and abroad; three maritime squadrons operated in conjunction with other forces for the defence of Canada's East and West Coasts; and one reconnaissance squadron carried out aerial photography and reconnaissance in the Canadian North.

The strength of the RCAF at Mar. 31, 1961 was 51,349 officers and men in the Regular Force and 3,130 in the Auxiliary Air Force.

Operations in 1960.—The RCAF continued to fill its air defence commitments, improve the effectiveness of its air defence squadrons and emphasize defence integration with the United States Air Force under the North American Air Defence Command (NORAD). The Canadian air defence force remained at nine squadrons of *CF-100, Mk-V* aircraft. No. 1 Air Division in Europe, comprised of eight *F-86*, four *CF-100, Mk-IVB* and one *AC and W* squadrons, continued to fill Canada's commitment to the NATO air defence fighter force.

Air Defence Command continued its planned build-up and had under operation three radar systems—the Distant Early Warning Line (DEW), the Mid-Canada Line (MCL), and the Pinetree Line—as an integral part of NORAD. The southern portion of the Ground Observer Corps was disbanded effective June 1, 1960; the northern portion continued operations as a supplement to the early warning radar system.

The RCAF Maritime Air Command during 1960 contributed three land-based maritime squadrons to the Maritime Defence of North America. Two of these squadrons, based on the East Coast, have been completely equipped with *Argus* aircraft, the largest and most modern anti-submarine aircraft in the world. A continuous program of aircraft modernization and re-equipping with improved anti-submarine devices was also conducted throughout the period. These two squadrons and a third *Neptune* aircraft squadron on the West Coast participated in a number of national, international and NATO anti-submarine exercises conducted throughout the year. Daily patrols and surveillance of ocean areas adjacent to the Canadian coastline were also maintained.

Air Transport Command continued to provide support to the Air Division and the Army Brigade in Europe using *North Star* aircraft. *North Stars* were also used to support the United Nations Emergency Force in Egypt and the Congo as well as to assist in the transportation of medical aid, food and equipment in support of the disasters at Agadir and in Chile. A flying unit, operating *Dakota* and *Otter* aircraft, was maintained for local employment in Egypt in support of UNEF. *Fairchild C-119* aircraft of Transport Command were engaged in cargo and personnel carrier operations in Canada and in paratroop training for the Canadian Army. *North Star*, *C-119* and *C-130* aircraft were used in support of Arctic Weather Stations. Routine reconnaissance flights in the Arctic Archipelago and photographic missions for the Department of National Defence were carried out by 408 Squadron.

During the year, the RCAF continued to provide search and rescue services in Canadian areas of responsibility; 48 major search operations were conducted, of which 24 were for civil aircraft, eight were for military aircraft and 16 for marine and other craft. During the year, 196 mercy flights were performed. The total flying time for all search and rescue operations was 6,900 hours.

Training.—During the year ended Mar. 31, 1960, the RCAF provided training for approximately 4,000 officers and airmen to replace releases and for some 1,500 who were to assume new appointments resulting from technological changes. Basic training qualified personnel to do the relatively simple but vital jobs in the RCAF; conversion and advanced training qualified personnel to do more complex jobs and to assume greater responsibilities.

During the year, training was given in the operation and maintenance of the SAGE and Bomarc system which will become operational in the RCAF in the near future. To keep abreast of rapid technological developments, a number of officers and airmen attended short familiarization courses on computers and other electronic equipment at Clinton, Ont.; courses on guided missiles and space technology at Clinton and Camp Borden; and courses with industrial firms in Canada and in the United States. Pilot and radio navigator trainees received primary aircrew training at Centralia, Ont. Pilot trainees were given primary flying training at Centralia, basic at Moose Jaw, Sask., or Penhold, Alta., and advanced at Portage La Prairie or Gimli, Man. Radio navigators received training at Winnipeg, Man. Approximately 1,000 entrants whose native language was French were given from 10 to 22 weeks of instruction in the English language in schools located at St. Jean, Que., and Centralia, Ont.

Forty-five Danish and 35 Norwegian nationals were trained as pilots and five Turkish Air Force officers were trained as advanced jet instructors. About 20 Canadian Army officers received a special 60-hour flying training course at Centralia and 30 RCN personnel following regular primary and basic phases received advanced twin-engine training at Saskatoon, Sask.

Formal trade courses for tradesmen and technicians and newly commissioned non-flying list officers in aeronautical engineering, armament, supply, telecommunications and flying control were conducted at RCAF technical schools in Ontario located at Camp Borden, Aylmer and Clinton. Aircraft system trainers were used extensively to support technician and aircrew training programs at field technical training units and operational training units. Advanced personnel, both Regular and Auxiliary, were given assistance in a wide range of subjects to help them improve in job proficiency and qualify for higher trade groupings. Semi-annual trade examinations were written under the direction of Training Standards Establishment located at Trenton, Ont.

RCAF Reserve.—The active sub-components of the RCAF reserves are designated as the Auxiliary and the Primary Reserve.

Eleven Auxiliary flying squadrons, equipped with transport aircraft, are maintained to carry out emergency transport and reconnaissance operations. The RCAF also maintains 13 Auxiliary medical units and eight technical training units. These units will in future become associated with the flying squadrons in an emergency role. Disbandment of the 14 aircraft control and warning squadrons commenced in February 1961 and will be completed in January 1962.

The Primary Reserve is concerned mainly with the training of members of the University Reserve Training Plan (URTP). Other Primary Reserve components are Air Cadet Officers (ACO) and the Manning Support Officers (MSO). The Reserve Tradesmen Training Plan, which was formerly a part of the Primary Reserve, was discontinued during 1960 and all future training for Auxiliary squadrons and units will be carried out by the technical training units.

During the year ended Mar. 31, 1961, an officer's training course was conducted at the Reserve Officer School (ROS), St. Jean, Que., for some 300 first-year URTP university undergraduates. Following this initial training, non-flying list cadets commenced basic training courses in aeronautical engineering, telecommunications, armament, supply and accounts while others in the medical, air services and personnel lists were employed at Regular Force units on contact training. Second-year and third-year flight cadets continued with their formal or contact training commenced in previous years.

Royal Canadian Air Cadets.—Air Cadet activities in Canada are sponsored and administered by the Air Cadet League of Canada. The League is a voluntary civilian organization formed in 1940 to provide preliminary aviation training for potential members of the Royal Canadian Air Force. The peacetime objective of air cadet training is to give basic training in aviation and other closely associated subjects as well as citizenship training which will better fit Canadian youth for careers in civilian or Service life. The RCAF works in partnership with the League and provides training personnel, syllabi and equipment.

The authorized ceiling of cadet enrolment is 25,500 and the strength at Jan. 31, 1961 was approximately 24,500, attached to 332 squadrons across Canada. Air Cadet training is carried out in more than 270 communities from Newfoundland to British Columbia. During the summer of 1960, camps were held at RCAF Stations at Summerside, P.E.I., St. Jean, Que., Trenton, Ont., and Sea Island, B.C., attended by about 6,000 cadets together with officers and instructors. A seven-week course for senior leaders and drill instructors was held for 200 cadets at RCAF Station, Camp Borden, Ont.

Under the International Exchange Visits Program for 1960, sponsored jointly by the RCAF and the Air Cadet League, 58 cadets were exchanged with the United Kingdom, the United States, Denmark, the Netherlands, Norway and Sweden.

About 250 senior air cadets receive flying training annually at flying clubs through scholarships provided by the RCAF and additional scholarships are awarded by the Air Cadet League and other organizations which in 1960 numbered 109.

Subsection 4.—The Defence Research Board

The Defence Research Board was established on Apr. 1, 1947 by an amendment to the National Defence Act. The Board consists of a full-time chairman and vice-chairman, five ex officio members and nine other appointed members. The ex officio members are the Chiefs of Staff of the three Armed Services, the Deputy Minister of National Defence and the President of the National Research Council. The other members, appointed by the Governor in Council for three-year terms, are selected from universities and industry because of their scientific and technical backgrounds.

The organization consists of headquarters staff, an operational research group and nine field research stations, and liaison offices at London, England, and Washington, U.S.A. Advisory committees composed of leading Canadian scientists provide invaluable assistance to the Board by their consideration of a variety of problems.

The Government, realizing the vital need for continuity in research, planned the Defence Research Board as a fully integrated and permanent part of the defences of the country. To assist co-ordination at the highest level, the Chairman of the Board has the status of a Chief of Staff and is a member of the Chiefs of Staff Committee and of the Defence Council. Thus the Defence Research Board has been described as a fourth Service. Its fundamental purpose is to correlate the special scientific requirements of the Armed Forces with the general research activities of the scientific community at large. The Board's policy is to select and concentrate its efforts upon defence problems of particular importance to Canada or for which Canada has unique resources or facilities. Existing research facilities such as the National Research Council are used wherever possible to meet the needs of the Armed Forces. The Board has built up new facilities only in those fields that have little or no civilian interest. From the policy of specialization it follows that close collaboration must be maintained with Canada's larger partners. Specialization is made possible only through the willingness of the United Kingdom and the United States to exchange the results of their broader programs for the less numerous but nevertheless valuable benefits of Canadian research.

The activities of the Defence Research Board are concerned primarily with maritime warfare, armament, telecommunications, Arctic, special weapons, operational, medical, aeronautical and materials research problems of specific interest to Canadian defence. To conduct this program of research, the Defence Research Board operates nine specialized research and development establishments and, in addition, organizes and supports research on problems of defence interest in universities and other agencies.

Research on maritime warfare problems is carried out at the Naval Research Establishment, Dartmouth, N.S., and at the Pacific Naval Laboratory, Esquimalt, B.C. The principal emphasis at each station is on problems related to submarine detection and tracking.

Research and development of weapons and armament is undertaken by the Defence Research Board in co-operation with the Armed Services at various establishments. The largest of these is the Canadian Armament Research and Development Establishment near Valcartier, Que. Its principal activities include research and development and testing of new and improved weapons.

Research on telecommunications is carried out at the Defence Research Telecommunications Establishment. This Establishment is concerned mainly with problems of communication and air navigation and supports these with considerable effort in basic research in the fields of radio propagation and electronics components.

Research dealing with problems in Arctic operations is conducted at the Defence Research Northern Laboratory, Fort Churchill, Man. This Laboratory has given valuable support in the instrumentation of rockets fired from the rocket range located at this station.

Special weapons is the generic term used to cover research on the defensive aspects of chemical, biological and atomic weapons. This work is carried out at three Defence Research Board establishments—the Defence Research Chemical Laboratories at Ottawa, Ont., the Suffield Experimental Station at Ralston, Alta., and the Defence Research Kingston Laboratory at Barriefield, Ont.

Medical, psychological, clothing and food research is carried out intramurally at the Defence Research Medical Laboratories near Toronto and extramurally in Canadian universities by means of a grant-in-aid program. An important field of activity is aviation medicine but investigations include naval and army problems as well as studies on blood substitutes, infection and immunity, burns and wounds, the effects of noise on hearing, and other factors likely to affect a military man's efficiency and health.

Most of the basic aeronautical research program is also carried out extramurally in Canadian universities and in Canadian industry. The principal fields covered are aerodynamics, aircraft propulsion, and engineering materials.

Operational research is carried on in the Defence Research Board by a Headquarters group. This group conducts long-range scientific analyses of future defence problems; it is also responsible for computational work on behalf of other operational research sections in cases where the use of digital computational equipment is required. In addition to this group, trained operational research scientists are provided by the Defence Research Board to the operational research teams in the three Armed Services, and also to a fourth outside group known as the Defence Systems Analysis Group which undertakes, for the Chiefs of Staff Committee, analytical studies of those defence problems that lie beyond the executive responsibility of an individual Chief of Staff.

In all, the Board continues to support those fields of research that are of foremost interest to the Canadian Armed Services and the program is under continual review to ensure that cognizance is taken of all changes in emphasis in defence requirements. Close liaison is maintained between the Defence Research Board and the Department of Defence Production to ensure that research and development activities are closely integrated with production.

Section 2.—Services Colleges and Staff Training Colleges

Canadian Services Colleges.—The three Canadian Services Colleges are the Royal Military College of Canada founded at Kingston, Ont., in 1876, Royal Roads which was established in 1941 near Victoria, B.C., as a school for naval officers, and Collège Militaire Royal de Saint-Jean established at St. Jean, Que., primarily to meet the needs of French-speaking cadets. The Royal Military College and Royal Roads were constituted as Canadian Services Colleges in 1948, and Collège Militaire Royal de Saint-Jean was opened in 1952. In 1959 the Legislature of the Province of Ontario granted the Royal Military College a charter empowering it to grant degrees.

The purpose of the instruction and training at the Services Colleges is to impart the knowledge, to teach the skills and to develop the qualities of character and leadership essential to officers of all three Armed Services. The courses of instruction provide a sound and balanced liberal scientific and military education leading to degrees in Arts, Science and Engineering which are granted by the Royal Military College. The organization and training give cadets the opportunity to command and to exercise judgment.

For cadets entering the Royal Military College and Royal Roads the course is of four years duration. As the third and fourth years of the course are given only at the Royal Military College, cadets entering Royal Roads must proceed to that College for the final two years of the Arts, Science or Engineering courses. For cadets entering Collège Militaire Royal, which gives a preparatory year, the course is of five years duration. Cadets take the preparatory, first and second years at that institution and the final two years at the Royal Military College.

The college year is eleven months, divided into three terms—autumn, winter and summer. The months September to May are devoted to academic training supplemented by such military studies as drill and physical training. The summer term, June to mid-August, is spent in practical training at an establishment of the Service in which the cadet is enrolled. Academic requirements for admission to the first year at the Royal Military College and Royal Roads is senior matriculation (or its equivalent) in the following subjects: English, physics, mathematics (algebra, geometry and trigonometry), chemistry and either history or a language, preferably French. French-speaking candidates having a B.A. degree from a classical college may be accepted directly into the first year at Collège Militaire Royal. For admission to the preparatory year at that institution the academic requirement is junior matriculation (or its equivalent) in English, French, algebra, geometry, physics and chemistry, although consideration is given candidates who do not possess the standing in French. Candidates from the classical colleges require at least sixth-year standing.

To be accepted, a candidate must be single, a Canadian citizen or British subject normally resident in Canada and physically fit in accordance with the medical standards of the Service in which he enrols. The age limits for admission to the first year are between 16 and 21 years as of Jan. 1 of the year of entry; for admission to the preparatory year a cadet must have reached his 16th but not his 20th birthday on Jan. 1 of the year of entry. Personal interviews and medical examinations of candidates are carried out by Service Boards located at various centres across Canada. Senior officers representing the Services and a faculty member from the Services Colleges sit on interview boards. The interview boards base their recommendations on the physical and personal qualifications of the candidates; responsibility for final selection rests with a board appointed by the Minister of National Defence.

Since September 1954, virtually all cadets entering the Services Colleges have been required to enrol under the Regular Officer Training Plan. Under this Plan applicants accepted for entry enrol according to their choice, as naval cadets in the Royal Canadian Navy, as officer cadets in the Canadian Army or as flight cadets in the Royal Canadian Air Force. Costs of tuition, board, lodging, uniforms, books, instruments and other essential fees are borne by the Department of National Defence, and cadets are paid at the rate of $63 a month. On successfully completing their academic and military training, cadets are granted permanent commissions in the regular force but may, if they so wish, apply for release after three years of service following completion of academic training.

The only cadets now accepted at the Services Colleges in a reserve capacity are those who qualify for Dominion Cadetships, which are awarded by the Federal Government in recognition of a candidate's parent having been killed, died or been severely incapacitated in the service of one of Canada's Armed Forces. A maximum of 15 Cadetships may be awarded in any one year, five in each Service. Each is valued at $580, which covers first-year fees.

During the 1960-61 academic year, 995 cadets were in attendance at the Services Colleges—432 of them at Royal Military College, 175 at Royal Roads and 388 at Collège Militaire Royal de Saint-Jean. Of the total, 206 were enrolled in the Navy, 370 in the Army and 419 in the Air Force.

Staff Training Colleges.—The Canadian Army Staff College at Kingston, Ont., trains officers for staff appointments in peace and war. The course is 21 months in duration with a student intake every second year. Although most of the student body is composed of Canadian Army officers, officers from the other two Services and from the armies of other Commonwealth and NATO countries also attend. The system of instruction is based upon the study of précis and other references, demonstrations and lectures, and indoor and outdoor exercises. Most of the work is carried on in syndicates, each under a member of the directing staff. Attention is paid to both individual and team work. Aside from purely military subjects such as the study of tactics, the curriculum includes national survival, research and development, world affairs and lectures by prominent guest speakers.

The Royal Canadian Air Force College at Armour Heights in Toronto, Ont., is a permanent establishment consisting of a Staff School for junior officers and a Staff College for senior officers. The Staff School course is for RCAF officers only; the Staff College course is for officers of other Services as well as Air Force officers. The course affords professional education for officers normally of Squadron Leader and Wing Commander ranks, preparing them to assume higher appointments. The directing staff selected from the Royal Canadian Air Force is augmented by an exchange officer from each of the Royal Canadian Navy, the Canadian Army and the Royal Air Force. The student body, in addition to Royal Canadian Air Force officers, has eight representatives from the Royal Canadian Navy and one or two from each of the Canadian Army, Royal Air Force and United States Air Force. The course is designed to assist the student to think logically and express his ideas with precision both orally and in writing; to know his Service and understand the employment of air forces; to keep abreast of scientific and technical developments that may affect the employment of air forces; and to gain a perspective of national and international problems. Lecturers are drawn, when desirable, from industry, the Armed Forces, the diplomatic corps and universities. Instructional visits are made to commercial and military establishments in Canada and abroad.

The National Defence College at Kingston, Ont., which opened on Jan. 5, 1948, is a senior defence college providing an 11-month course of study covering the economic, political and military aspects of the defence of Canada. Senior officers and civil servants from the Armed Forces and government departments attend, as well as a few representatives from industry. An extensive lecture course is provided, with lecturers chosen from leaders in various fields in Canada, the United States, the United Kingdom and other countries. In addition, educational tours and visits to certain parts of Canada, the United States, Europe and the Middle East give students more knowledge of conditions and influences in their own and other countries. The 14th course from September 1960 to July 1961 was attended by students from the following organizations: four each from the Royal Canadian Navy, the Canadian Army and the Royal Canadian Air Force; two each from the Defence Research Board and the Department of External Affairs; and one each from the Department of Finance, the Civil Service Commission, the Royal Canadian Mounted Police, the Department of Labour, the Department of Defence Production and the Department of National Defence. Representation from outside Canada included one member each from the Royal Navy, the British Army, the Royal Air Force and the Commonwealth Relations Office of the United Kingdom, the United States Navy, the United States Army, the United States Air Force and the State Department of the United States.

PART II.—DEFENCE PRODUCTION*

Under the provisions of the Defence Production Act (RSC 1952, c. 62, as amended), the Department of Defence Production has exclusive authority to procure the goods and services required by the Department of National Defence and the responsibility to ensure that the necessary productive capacity and materials are available to support the defence production program. The Department also serves as procurement agent for the Canadian Commercial Corporation, a Crown company primarily responsible for the purchase in Canada of defence goods required by other governments and of supplies needed to meet Canadian commitments under the Colombo Plan and other international agreements. The Department is responsible for planning and making other necessary arrangements to provide for the immediate establishment of a War Supplies Agency should there be a nuclear attack. Military construction is the prime responsibility of Defence Construction (1951) Limited, a Crown company reporting to Parliament through the Minister of Defence Production.

During 1960, the Department of Defence Production and Defence Construction (1951) Limited placed defence contracts on behalf of the Department of National Defence having a total net value of $805,871,000. This was an increase of 36.0 p.c. over the total for the preceding year. (The net value of contracts placed takes account of the value of amendments that increased or decreased existing contracts as well as the value of new contracts issued.) The major increases in the net value of contracts issued were in the aircraft, ships, and electronics and communication equipment programs. Contracts and amendments issued for the aircraft program had a total value of $343,919,000 in 1960, more than two-thirds greater than in 1959. This program accounted for 42.7 p.c. of the total net value of contracts placed in 1960, compared with 34.3 p.c. in the previous year. Contracts having a total net value of $133,617,000 were placed for the electronics and communication equipment program in 1960, an increase of 62.3 p.c. over 1959. The increases in the aircraft and the electronics and ammunition equipment programs were largely attributable to commitments related to the *CF-104* aircraft. The ships program involved contracts valued at $86,243,000, the largest portion of which was for destroyer escorts. Defence construction contracts totalled $51,571,000 in 1960, 23.2 p.c. lower than in 1959.

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* Prepared by the Economics and Statistics Branch, Department of Defence Production, Ottawa.

The value of expenditures on defence procurement and construction amounted to $620,592,000 in 1960, 7.8 p.c. less than in 1959. All the major programs except aircraft showed declines. Aircraft spending increased by $6,044,000. Expenditures for ammunition and explosives dropped by $16,331,000 and expenditures for electronics and communication equipment declined by $12,092,000. Expenditure on clothing and equipage was $16,516,000 lower in 1960 mainly because of the unusually large output in 1959 when the Department of National Defence took over the Defence Production stockpile of cloth.

Of the total net value of contracts issued during 1960, 10.6 p.c. was placed outside Canada compared with 8.0 p.c. in 1959. The increase in contracts placed abroad in 1960 was accounted for mainly by purchases of the *CF-104D* trainer aircraft, the *LN-3* navigation system, and a small number of *C-130B* aircraft with associated spares and equipment. Payments to defence contractors outside Canada in 1960 came to 11.3 p.c. of total spending, a somewhat higher proportion than the 6.7 p.c. paid directly to foreign firms in 1959.

Aircraft.—*CF-104* production became the major program within the Canadian aircraft industry in 1960. Output of the airframes, engines and equipment proceeded on schedule. The similarity between the Canadian version of the *F-104* aircraft and that adopted by several NATO countries has lent itself to close co-operation between the countries concerned.

Deliveries of the *CP-107 Argus* maritime reconaissance aircraft and the *CS2F Tracker* carrier-borne aircraft were completed in 1960, and deliveries of the *CC-109* medium-range transport were almost completed. The *CC-106* long-range transport production programs continued and the first aircraft was delivered before the end of the year. Production of *Otter* aircraft for the RCAF also continued throughout 1960. Four *Caribou* aircraft were purchased for use and support of United Nations activities. Contracts were placed on behalf of the United States Army for a number of *Caribou*, and a development program on the *Mk-2* version of this aircraft was started in co-operation with the manufacturer. The first of a small quantity of *Albatross* search and rescue aircraft ordered from the United States was delivered. Four *C-130B Hercules* medium-range, heavy-bulk-carrier aircraft and equipment were also purchased in the United States.

Production of *R-1820-82* piston engines and *Hamilton Standard* propellers, both for the *CS2F Tracker*, was completed. Production of the *J-79-7* turbojet engine for the *CF-104* was on schedule and the first engine successfully completed its test run. The Department gave financial support to the *PT-6* gas turbine engine which was being developed by a Canadian company.

In the field of aircraft equipment items, production of the position and homing indicator was entered into for the *CF-104* program and was selected by the Air Forces of the Federal Republic of Germany, the Netherlands, Belgium and Italy for use in their *F-104* aircraft. The *LN-3* inertial navigation system, the *MH-97* automatic flight control system and other items of navigation equipment for the *CF-104* were also put into production. Further quantities of the air navigation and tactical control system (ANTAC) were ordered for the *Neptune* anti-submarine aircraft.

Electronics.—The production of search and height-finding radars and of fiberglass radomes for the Air Forces of both Canada and the United States neared completion in 1960. Production continued on counter countermeasure equipment and on selective identification equipment. The development and production of data-processing equipment was a significant contribution to the air defence radar program. Production began on battlefield surveillance radars.

Two major search and attack sonar programs continued in production during the year. Work on the Canadian-designed variable depth sonar also continued, with additional production being required to meet the needs of the Royal Navy. A variety of naval navigation equipment, such as gyro compasses, logging equipment and plotting tables, was produced. Sonobuoy development and production continued for the Royal Canadian Air Force and the United States Navy.

Production and installation continued on air defence communication (ADCOM) for the Royal Canadian Air Force. Planning continued for semi-automatic ground environment (SAGE) communications in Canada, and initial contracts were placed for the lease of long-line and on-base systems. Rearward communications for the Ballistic Missile Early Warning System (BMEWS) were completed during the year. Production for Canadian Army vehicle communications continued in the United Kingdom. Procurement began for the radio transmitting and receiving equipment for new naval ships.

The production of the NASARR system of fire control and terrain avoidance for the *CF-104* aircraft was a major project in the field of aircraft electronics in 1960. Communication, navigation and identification equipment for several major new and retrofit programs continued in production. Considerable development work took place on airborne anti-submarine electronics, including a sonobuoy receiver retrofit program.

Development of an *Argus* tactical crew procedure trainer (flight simulator) neared completion and programs were completed in connection with the *Argus* operational flight trainer and general purpose flight and instrument trainers. A major program for the supply of *CF-104* operational flight and tactics trainers was undertaken, including requirements for the Federal Republic of Germany, the Netherlands and Belgium. A requirement for a tactical trainer for the Royal Canadian Navy was met and work began on a models control trainer for that Service.

Considerable activity was devoted to the operation and maintenance of the Mid-Canada early warning line. Installation of new radar, data-processing, communication, navigation and identification equipment, largely for the United States military services, required substantial effort during the year.

Shipbuilding.—Construction of the six vessels of the third group of destroyer escorts, known as the repeat-Restigouche class, continued during the year. The last two vessels of this class will be improved to include, among other things, a helicopter flight deck and variable depth sonar equipment. The central procurement agency located at the lead yard maintained its operations under the Department's supervision. This procurement agency is responsible for the bulk purchase, distribution and accounting connected with the supply of equipment to be worked into the vessels of the repeat-Restigouche class.

A contract was placed on a normal commercial basis for the construction of a naval tanker-supply vessel. This is the first time that a contract of this nature has been negotiated for a large Canadian naval vessel. Contracts for a standard diving tender and a tank cleaning barge for the Royal Canadian Navy were accelerated as part of the Federal Government's winter works program. A contract was issued, as a result of competitive tenders, for the construction of a hydrographic and oceanographic survey vessel for the Department of Mines and Technical Surveys. Programs of small boats were completed in 1960.

Armament.—Production of anti-submarine mortars, 2.75″ rockets and 3″/50 calibre illuminating cartridges was completed during 1960. Among the major items under production were anti-submarine torpedoes for the Royal Navy; 7.62mm rifles and 9mm submachine guns and ammunition; 20 pdr., 105mm howitzer, and 81mm mortar smoke ammunition for the Army; 3″/50 calibre, 3″/70 calibre and 4″ naval gun ammunition; practice depth charges and bombs; high altitude rockets; and many types of pyrotechnic devices for the Armed Services.

Procurement of armament items from abroad increased as a result of smaller requirements for the Armed Services. Items were imported, however, only where production in Canada would have meant the establishment of special facilities at an unduly high cost. The principal purchases in the United States were for 762mm Honest John rocket equipment and jet assisted take off (JATO) rockets. Purchases in the United Kingdom included 3″/70 calibre guns and mountings, 105mm tank ammunition, star shells and flares, safety aircraft ejection equipment, and special armour plate.

Major development projects included navigational and arming aids, underwater explosive signals, new type anti-submarine projectiles, plastic components, a new type of propellent, and pyrotechnic devices.

Construction.—Construction activity for the Canadian Armed Services decreased slightly to $64,193,000 in 1960, as measured by payments to contractors. The value of contracts placed in 1960 also declined to $51,571,000. The largest contracts placed by Defence Construction (1951) Limited on behalf of the Canadian Forces were for complete construction of two heavy radar sites and a Bomarc missile-launching base. Other large contracts included a technical training building at Camp Borden, Ont., a new wing for the Defence Research Board radio physics laboratory at Shirley Bay, Ont., and a composite accommodation building at Shelburne, N.S. There was a large amount of construction in Canada in 1960 for the United States Air Force. The value of payments to contractors by the United States totalled $17,310,000. Work continued on such projects as refuelling facilities for the Strategic Air Command, the radar improvement programs, and the Ballistic Missile Early Warning System.

General Purchasing.—The procurement of supplies and services not normally requiring special production facilities increased slightly in 1960 to $179,300,000. Materials purchased by the headquarters organization included bulk requirements of such items as petroleum products, coal and coke, clothing and footwear, medical and dental stores, power generating and control and distribution equipment, beverages and packaged foods, building supplies and hardware, furniture and furnishings, barrack equipment and naval stores, as well as aircraft ground-handling equipment and all types of mechanical transport, construction and road maintenance equipment. Services arranged by headquarters included certain research and development projects, engineering, food catering and aerial surveys. Research projects included the investigation of indigenous tanning materials for the production of leather, ways of combating ice on fixed structures and airport runways, and the bearing strengths of ice sheets. Industry and certain Crown agencies participated in the development of essential equipment in the nuclear, bacteriological and chemical fields.

During the year contracts were arranged for the Canadian fabrication and testing of freeze-dry equipment for dehydrating meats and vegetables at a faster rate than has been reached elsewhere. A master prototype of the *Bobcat*, in the form of an armoured personnel carrier, was delivered. Contracts for aerial surveys in 1960 used the full facilities of all Canadian firms engaged in this work. These survey requirements ranged from topography studies of the Northwest Territories to aerial mapping of densely populated areas for use by civil defence co-ordinating groups. Purchases in connection with the *CF-104* program consisted mainly of ground starting and electrical power sets, generator frequency converters, parachutes, pressurized clothing to overcome the force of gravity, helmets, visors and barometric parachute releases.

A wide range of emergency health and welfare and national survival requirements were purchased. These included packboards, hoists, tackle blocks, pumps, pharmaceuticals, drugs, various types of medical equipment, X-ray machines, dental stores, blood and intravenous solutions.

The 14 district offices across Canada continued to contract for services from local contractors and purchase fresh food and supplies needed for immediate use by regional military units and establishments. Several offices procured urgent and unusual requirements for the movement of the Canadian task force assigned to the United Nations in the

Congo. All offices participated actively in the procurement of materials required for the winter works program.

Defence Production and Development Sharing.—The value of United States prime contracts and subcontracts related to the defence production and development sharing program that were received by Canadian industry amounted to $112,700,000 in 1960 compared with $96,300,000 in 1959. In the subcontracting area, which was virtually non-existent before the establishment of the production sharing program in the autumn of 1958, invitations to bid rose from some 1,900 in 1959 to more than 2,700 in 1960, and replies to these bids rose from approximately 1,400 to more than 2,100. United States subcontracts received by Canadian firms numbered 882 with a value of $51,700,000, compared with 365 valued at $45,300,000 in 1959.

In 1960, negotiations continued toward liberalization and expansion of previous Canada–United States arrangements designed to encourage joint production sharing. Thus, regulatory and procedural restrictions, such as the Buy American Act and duty regulations which prevented Canadian firms from obtaining equal access to United States defence markets, were virtually eliminated with regard to defence supplies. Other problems, such as security, were not completely eliminated but their effects on Canadian suppliers were mitigated. The lessening of these problems did much to establish a climate favourable to production sharing.

Equally important was the intensive educational program carried out in both countries. The United States Department of Defense and the American Services distributed directives and regulations designed to encourage purchasing from Canada. Representatives of many United States companies visited Canadian firms to make facility surveys.

The Department of Defence Production continued its extensive campaign to complete the listing of Canadian companies as sources for United States Government requirements. Departmental officers were able to obtain information and provide guidance to participants in the program as a result of visits to United States procurement centres and to industry, trade associations, trade fairs and symposiums. Of particular importance was the revised booklet on *Canada–United States Defence Production Sharing,* which is widely used in both countries. Other booklets distributed to Canadian industry outlined procedures used by the United States Services in regard to research and development purchasing. In addition, United States buyers were provided with brochures listing Canadian defence companies and the areas in which they had special competence.

The Department provided financial assistance to Canadian firms, primarily in the electronics and aircraft industries, by absorbing part of their preproduction and tooling costs. This was designed to put them in a more equitable competitive position with United States contractors who normally have an advantage because most of their preproduction and tooling costs have been written off under previous contracts. Payments of $630,000 were made to Canadian firms in 1960 for this type of assistance, and new commitments made totalled $307,000.

Increasing emphasis was placed on the research and development aspect of production sharing in 1960. This involved the continuation of financial support for a long-term development program designed to maintain and improve Canadian industry's scientific and technical competence so that it will be able to participate in future United States defence production programs. The Department provided assistance to competent Canadian companies in support of uniquely Canadian projects whose successful development is expected to be of interest to the United States Services. To improve Canadian industry's position to compete for United States financed development requirements, the Department shared the cost of selected projects with the United States Government and the Canadian companies concerned. Contracts valued at $2,425,000 were issued in 1960 for this research and development assistance. Payments amounted to $2,033,000. In addition to these contracts, financial support for a number of other projects was being considered, including several unique Canadian concepts. These projects, and United States requirements approved in principle for support, were valued at $12,000,000. Canadian companies received almost $3,000,000 in United States defence research and development business during the year. The development projects were in such areas as navigational aids, communication equipment, anti-submarine warfare equipment, gas turbine engines, and vertical and short take off and landing (VTOL and STOL) aircraft.

Co-operation in NATO on Research, Development and Production.—The Department of Defence Production was given the responsibility of co-ordinating Canada's activities in connection with the efforts of the North Atlantic Treaty Organization to increase co-operation in research, development and production in order to attain maximum efficiency in standardization and production by member countries. Canada has submitted a number of projects for consideration by the NATO groups, including the *Caribou* aircraft, a counter mortar radar, a land vehicle navigation set and variable depth sonar equipment.

Arising out of these increased activities within NATO, several countries have expressed directly their interest in Canadian equipment, such as the counter mortar radar and the vehicle navigation set. Canadian firms were encouraged to become potential suppliers of military equipment to European countries.

Emergency Supply Planning.—An Emergency Supply Planning Branch was established in the Department in May 1960 to be responsible for the planning and other peacetime arrangements necessary to permit a War Supplies Agency to be brought into effective existence immediately should a nuclear attack be made on this country.

Priority was given to the development of an interim plan to meet the basic needs of the country during the first few weeks after a nuclear attack. This interim plan has three major objectives: (1) the development of an organization scheme for the War Supplies Agency and selection on a standby basis of suitable persons to staff it; (2) the collection of inventory data on major stocks of food, fuel and essential materials, and tabulation of these data in a form suitable for post-attack damage analysis; and (3) the drafting of legal instruments necessary to permit effective control and use of commodities and facilities available after an attack. Good progress was made toward reaching these objectives.

The War Supplies Agency, when brought into existence at the outbreak of a nuclear war, would have full responsibility for all aspects of control over the production, distribution and pricing of supplies, both civil and military, with the exception of production on the farm and the catching and landing of fish.

1.—Net Value of Total Canadian Government Defence Contracts Placed and Expenditures on such Contracts, by Program, 1959 and 1960

NOTE.—Includes all contracts placed by the Department of Defence Production and Defence Construction (1951) Limited on behalf of the Department of National Defence. Net value includes the value of all new contracts awarded together with the value of amendments issued which increased or decreased the commitments of existing contracts.

Program	Net Value of Total Contracts		Expenditures on Contracts	
	1959	1960	1959	1960
	$'000	$'000	$'000	$'000
Aircraft	202,632	343,919	245,893	251,933
Ships	25,989	86,243	35,056	31,203
Tank-automotive	7,893	6,947	7,574	8,572
Weapons	7,651	6,099	12,963	9,436
Ammunition and explosives	11,398	13,604	32,930	16,599
Electronics and communication equipment	82,300	133,617	99,986	87,894
Fuels and lubricants	57,768	50,496	40,444	39,007
Clothing and equipage	18,808	6,284	20,639	4,123
Construction	67,141	51,571	67,723	64,193
Other	109,976	107,091	110,234	107,633
Totals	**591,556**	**805,871**	**673,441**	**620,592**

PART III.—CIVIL EMERGENCY PLANNING (Civil Defence)

Toward the end of 1958, the Canadian Government initiated a survey of the civil defence situation across the country. The report on this survey was considered in the context of the total military and civilian arrangements necessary to prepare the nation for the possibility of nuclear war. The Government decided, after considering all the relevant factors, to undertake a major rearrangement of federal civil defence functions and to offer to assume directly certain responsibilities previously carried by the provinces and municipalities. This civil defence reorganization became effective on Sept. 1, 1959. It is based on the two main principles that: civil defence should be considered a function or activity of government rather than an organization as such; and that the civil defence function should be divided into clearly defined tasks and assigned to levels of government, and at each level to those departments and agencies best able to undertake and discharge them.

At the federal level, the reorganization may be summarized briefly as follows:—

(1) The Emergency Measures Organization is the co-ordinating agency for all civil emergency planning and for all federal/provincial planning. It is responsible for planning for continuity of government, for tasks hitherto grouped under the designation "civil defence" and not now specifically assigned to some other department of government, and for general liaison with the provinces, NATO and foreign countries on matters relating to civil emergency planning.

(2) The Department of National Defence, more particularly the Army, has been given a primary role in survival operations and has been delegated responsibility for a substantial number of functions that are technical in character such as the complete public warning system, radiation monitoring and fallout prediction, emergency governmental communications, re-entry into damaged areas and support of local authorities in the maintenance of law and order.

(3) The Department of National Health and Welfare (which formerly had the major responsibility for civil defence) will concentrate its attention mainly on advising and assisting provincial authorities with respect to the provision of emergency health and welfare services. This Department has retained responsibility for the operation and management of the Canadian Civil Defence College at Arnprior, Ont.

(4) The Royal Canadian Mounted Police has the responsibility of providing advice and assistance to provinces concerning the preservation of law and order and the control of road traffic under emergency conditions.

(5) Other federal departments and agencies have duties that relate chiefly to carrying on essential functions or to maintaining the country's economic life under conditions of nuclear attack—the Department of Defence Production, the Department of Agriculture, the Department of Finance, the Bank of Canada, the Department of Transport, the Canadian Broadcasting Corporation and the Department of Labour in consultation with the National Employment Service of the Unemployment Insurance Commission.

(6) What was known as Federal Civil Defence Headquarters has disappeared.

Certain emergency functions of government are simply a projection of normal peacetime provincial responsibilities, and in these fields the provinces and municipalities have more experience and knowledge of local conditions than has the Federal Government or its agencies. The following are thus considered to be proper wartime responsibilities for the provincial authorities, with such federal assistance as may prove necessary:—

(1) *Preservation of law and order* and prevention of panic, by the use of their own police, municipal police, and special constables, with whatever support is necessary and feasible from the RCMP and the Armed Services at provincial request.

(2) *Control of road traffic*, except in areas damaged or covered by heavy fallout, including special measures to assist in the emergency movement of people from areas likely to be attacked or affected by heavy fallout.

(3) *Reception services*, including arrangements for providing accommodation, emergency feeding and other emergency supplies and welfare services for people who have lost or left their homes or who require assistance because of the breakdown of normal facilities.

(4) Organization and control of *medical services*, hospitals, and public health measures.

(5) Maintenance, clearance and repair of *highways*.

(6) Organization of municipal and other services for the maintenance and repair of *water and sewage* systems.

(7) Organization of municipal and other *fire-fighting services*, and control over and direction of these services in wartime except in damaged or heavy fallout areas, where fire-fighting services would be under the direction of the Army as part of the re-entry operation.

(8) Maintenance and repair of *electrical utilities*, and the allocation of the use of electricity to meet emergency requirements.

(9) *Training of civilians* as civil defence workers.

In outline, the federal civil emergency planning organization consists of: a Cabinet Committee on Emergency Plans to give policy guidance in all areas of civilian emergency planning for war; the Emergency Measures Organization with a headquarters staff at Ottawa and a regional office in each province; and departmental planning staffs. EMO Regional Officers have been appointed in all ten provinces. Their function is to co-ordinate the emergency planning of federal departments and agencies in the provinces and maintain effective liaison with the provincial governments, the provincial civil defence organization and the appropriate military authorities. The Federal Government pays up to 75 p.c. of the costs of approved provincial and municipal projects.

A booklet entitled *Your Basement Fallout Shelter* was issued by EMO in June 1960, giving instructions for the building of a "do-it-yourself" fallout shelter. In April 1961, the Department of Agriculture, at the request of EMO, published the booklet *Fallout on the Farm*, which describes the possible effects of radioactive fallout on agriculture and recommends protective measures. A third booklet *11 Steps to Survival*, issued in May 1961, outlines in general terms what Canadians can and should do to protect themselves against the potential dangers of nuclear war. Copies may be obtained from Provincial Civil Defence or Emergency Measures Co-ordinators in the provincial capitals.

The Government in 1960 formed the elements of a War Supplies Agency. This Agency, under the Department of Defence Production, will, in time of war, control the distribution and use of essential supplies, their prices and their rationing as required. Emergency facilities for the Federal Government outside Ottawa have been established and action is under way to provide regional facilities in each of the provinces. A peacetime planning nucleus of a wartime agency to control and administer national telecommunications systems is being established within the Department of Transport, to be known as the Emergency National Telecommunications Organization (ENTO).

A Federal-Provincial Conference on Civil Defence Arrangements was held at Ottawa in October 1959; the provinces, with one exception, were represented by provincial Cabinet Ministers and three Federal Cabinet Ministers attended. This was a continuation of a previous conference held in April 1959. Matters reviewed and discussed included evacuation and shelter policy, the role of the Army in civil defence, the Financial Assistance Programme, public information, training of civilians, and emergency communications. Civil emergency planning development and problems within NATO, the United States and the United Kingdom are under continual discussion and study.

A national exercise, under the name of *Exercise TOCSIN 1961*, was undertaken in May, the purpose of which was to test the emergency measures being developed by the federal and provincial governments and the municipalities. More than 1,100 municipalities took part. The exercise emphasized the measures necessary for national survival and continuity of government, and post attack problems that might arise for the federal and provincial governments.

CHAPTER XXVI.—SOURCES OF OFFICIAL INFORMATION AND MISCELLANEOUS DATA

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—SOURCES OF OFFICIAL INFORMATION

Section 1.—Federal Government Information Services

The chief source of statistical information on all phases of the economy of Canada is the Dominion Bureau of Statistics where the ten-year and five-year censuses of Canada are planned and statistical information of all kinds—federal and provincial—is centralized. Information that is not mainly statistical may be secured from the individual department concerned with the particular subject as indicated in the Directory at pp. 1192-1224. Certain government bodies and national agencies, because of the nature of their work and the appeal it has to broad sections of the population, are organized primarily as information or publicity agencies. Among these are: the Information Division, Department of External Affairs, which deals with questions about external affairs originating in Canada and with general requests originating abroad for information on Canada and Canadian affairs; the Trade Publicity Branch, Department of Trade and Commerce; the Information Services Division, Department of National Health and Welfare; the Canadian Broadcasting Corporation and the National Film Board. The Departments of Agriculture, Fisheries, Forestry, Northern Affairs and National Resources, and Mines and Technical Surveys, and such agencies as the National Gallery of Canada, the National Museum of Canada, the National Library, and the National Research Council, while not thus classed, are interested in the dissemination of information to a greater extent than most of the remaining government departments, though several of the latter have publicity branches.

Government departments, with few exceptions, issue their own lists of reports and publications. Departments are required by statute to publish annual reports, which are tabled each year in the House of Commons by their respective Ministers. However, for the purpose of this Section, only the services of the six information agencies mentioned above are described.

Section 2 has been prepared for the purpose of presenting to the reader a directory of all sources of information, federal and provincial, thereby directing him to the proper channels from which he may draw published material relating to any particular subject.

The Dominion Bureau of Statistics.—The Dominion Bureau of Statistics was set up by statute in 1918 as a central statistical department for Canada (SC 1918, c. 43). In 1948 this statute, which had been consolidated as the Statistics Act (RSC 1927, c. 190), was repealed and replaced by the Statistics Act (RSC 1952, c. 257), subsequently amended in March 1953 (SC 1953, c. 18).

The chief aims of the Dominion Bureau of Statistics are: (1) to furnish statistical data bearing on Canada for government and administration, whether municipal, provincial, national or international; and (2) to assist in meeting the needs of non-governmental users of statistics, arising from a growing awareness of the value of statistics to business efficiency and social planning.

Inquiries.—Hundreds of individual requests for information are received each day in the Information Services Division of the Bureau, routed through the appropriate divisions and answered as expeditiously as possible. Since the field of effort from the statistical side deals with all phases of the national economy, there is scarcely a subject upon which the Bureau is not able to give some information. Nevertheless only inquiries of a statistical nature should be directed to the Dominion Bureau of Statistics.

Publications.—Dominion Bureau of Statistics reports cover all aspects of the national economy; the *Canada Year Book* and Official Handbook *Canada* constitute authoritative compendiums of information on the institutions and economic and social development of Canada.

DBS publications are listed in a catalogue of *Current Publications* and in the Queen's Printer's *Catalogue of Canadian Government Publications*. The DBS *Daily Bulletin* and *Weekly Bulletin*, available from the Bureau's Information Services Division at an annual subscription of $1 each, are designed to serve persons wishing to keep closely informed on the full range of published information issued by the Bureau. Subscription orders for DBS publications or orders for single copies should be addressed to the Information Services Division, Dominion Bureau of Statistics, Ottawa, and should contain the necessary remittance in the form of a cheque or money order made payable to the Receiver General of Canada.

Information Division, Department of External Affairs.—The Information Division has several functions: to make Canada and Canadian policies better known and understood abroad, to provide information within Canada on the external policy of the Government and to assist in the conduct of business with other governments, international organizations and private associations in the field of cultural and educational relations.

Most of the information work is done abroad by officials at Canadian posts. The Information Division assists by formulating and advising on information policy abroad in an effort to ensure that this policy is related to the general objectives of Canadian foreign policy, and by producing and procuring material to keep Missions informed of developments within Canada. Journalists and others who visit Canada to write of Canadian affairs are given assistance from time to time by the Division.

Within Canada the Division produces and distributes various documents on external affairs—statements of government policy and reports on related developments abroad and on the work of the Department generally. The Division also answers inquiries from Canadian sources on these subjects as well as requests for information about Canada made by Diplomatic Missions at Ottawa.

The Division is responsible for dealing with many matters concerning scholarships, art exhibitions, concerts and visits by artists when these involve other countries.

Trade Publicity Branch, Department of Trade and Commerce.—For details, see p. 1018.

Information Services Division, Department of National Health and Welfare.—The responsibility of this Division, in co-operation with other Divisions of the Department of National Health and Welfare and provincial authorities, is the production and distribution of educational material on health, welfare and social security, for use throughout the country. This information, issued in the English and French languages, includes books, pamphlets, periodicals, posters, exhibits, displays, radio dramatizations, press and magazine features and releases, as well as films and film-strips prepared in co-operation with the National Film Board. Books, pamphlets, posters and displays are distributed in Canada through provincial authorities. The most important periodicals published by the Division are *Canada's Health and Welfare* (monthly), *Canadian Nutrition Notes* (monthly), *Occupational Health Bulletin* (monthly), *Industrial Health Review* (semi-annually) and *Nutrition Bulletin* (annually).

Canadian Broadcasting Corporation.—Television and radio broadcasting are important mediums of information to the public along with newspapers, films and other means of communication. Broadcasting in Canada combines, in one national system, publicly owned stations and privately owned local community stations, many of which are affiliated with the Canadian Broadcasting Corporation's networks.

Since its establishment in 1936 the Canadian Broadcasting Corporation has become one of the most effective channels through which information, official and unofficial, is broadcast to the people of Canada. Radio is relatively more important in Canada than in most countries because of the widely distributed population and the number of sparsely peopled areas, and the CBC has gradually bridged the gaps with high-powered transmitters designed to serve rural as well as urban areas. The CBC has also pioneered in the development of low-powered repeater stations attached to the network lines, which serve areas unable, because of topographical conditions, to receive an adequate signal from any existing station.

News broadcasts and information programs occupy a considerable proportion of national and regional network time. All CBC schedules include news, music, drama, informative talks, children's programs, school broadcasts, public service broadcasts, sports, women's activities, etc. There is a very wide range of radio and television fare, since the CBC not only produces its own programs in the various production centres across Canada but brings in selected programs from the networks of the United States, the British Broadcasting Corporation and other national radio and television systems. The CBC maintains a bureau at London, England, and at United Nations Headquarters in New York, and is credited with having done more to inform listeners of United Nations activities than any other broadcasting system.

Through the International Service operated by the CBC on behalf of the Canadian Government, programs are broadcast over shortwave in 11 languages: English, French, German, Spanish, Portuguese, Czech, Slovak, Russian, Ukrainian, Polish and Hungarian. The CBC International Service broadcasts information abroad on life and economic conditions in Canada as part of the general information plan for promoting a better understanding of Canada in other countries. In addition to this regular shortwave program service, the International Service provides special programs for transmission by broadcasting systems in other countries by means of shortwave relays or recordings on tape or disc. A library of musical and spoken-word programs is made available to foreign broadcasting systems through processed transcriptions for wide distribution.

National Film Board.—The National Film Board produces films, film-strips and still photographs on a great variety of subjects. In keeping with its terms of reference, the Board's products are both informative and interpretative, and are widely distributed throughout the world through theatrical and television media and non-theatrical channels.

In Canada, films are seen non-theatrically by the public by means of a distribution network of more than 750 film libraries and voluntary organizations which provide local facilities for community use of films placed in circulation through sales and loans. The Board maintains a preview library of 5,000 prints from many sources.

Non-theatrically abroad, the National Film Board provides films and assistance to libraries operated by the Department of External Affairs in 55 Missions, and to 15 libraries operated in trade posts by the Department of Trade and Commerce. In conjunction with the Canadian Government Travel Bureau, the Board carries out a travel film program to encourage travel in Canada by United States residents by arranging film distribution through 695 outlets in that country and by providing a special library of travel films for television use. Exchange and loan agreements are made with government and other organizations in many countries in order to obtain or extend distribution wherever possible. National Film Board offices abroad are located in New York and Chicago in the United States, New Delhi in India, London, England, and Buenos Aires, Argentina.

The Board's library of approximately 150,000 still photographs serves government departments, commercial photographers, newspapers, periodicals and many other organizations in Canada and abroad.

Section 2.—Directory of Sources of Official Information (Federal and Provincial)

To make the best use of the Directory of Sources of Government Official Information, it is necessary that the reader understand the broad differences in function between federal and provincial departments and their separate fields of work.

Certain areas of effort, such as trade and commerce, customs and excise, currency and banking, navigation, transportation, radio, census of population and national defence are constitutionally federal affairs and on such subjects the respective departments at Ottawa are the proper sources with which to communicate. Other fields of effort such as the administration of lands and natural resources, education, roads and highways, and health and hospitals are the responsibility of the provinces but certain federal departments are also concerned with specific aspects of these subjects and, as in the case of the Dominion Bureau of Statistics, in the co-ordination and presentation of the material for Canada as a whole.

As a general guide to the public, it may be pointed out that questions relating to the actual development and administration of resources should be forwarded to the particular provinces concerned. The Government of Canada, while not administering the resources within provincial boundaries, co-operates closely with the provinces and is in a position to furnish material for Canada, especially production data on a national basis, marketing data on international, national and provincial bases, research work and experimental station data on a national basis, and also on a provincial basis from Federal Government stations located within particular provinces. In agriculture, for instance, data on the breeding of livestock and the improvement of strains, on agricultural marketing and on crop yields are cases in point; in forestry, questions of forest research, forest fire protection and reforestation offer good examples. Inquiries directed to federal sources for information not of a statistical nature should be sent as a general rule to the individual departments listed in the Directory; inquiries for information of a statistical nature should be addressed to the Information Services Division, Dominion Bureau of Statistics, Ottawa.

Sale of Official Publications.—Under the provisions of the Public Printing and Stationery Act, the Queen's Printer and Controller of Stationery, Ottawa, has charge of the sale of all official publications of Parliament and the Government of Canada that are issued to the public, as well as of the free distribution of all public documents and papers to persons and institutions (libraries) entitled by statutory provisions to receive them. The Dominion Bureau of Statistics acts as the agent of the Queen's Printer with respect to the sale of DBS publications and issues an annual catalogue entitled *Current Publications.*

The regulations relating to the distribution and sale of government publications made in accordance with the provisions of Sect. 7 of the Public Printing and Stationery Act and Sect. 7 (e) of the Financial Administration Act were brought up to date and approved by Treasury Board on Mar. 31, 1955.

In compliance with these regulations, the Queen's Printer and Controller of Stationery issues the *Daily Checklist of Government Publications* which records for the information of the public service, libraries, etc., all Federal Government publications immediately upon release. Those authorized by law or regulation to receive free copies of government publications receive the *Daily Checklist* without charge; others desiring the service may purchase an annual subscription to be forwarded daily or in weekly batches as requested.

The Queen's Printer and Controller of Stationery also issues the *Monthly Catalogue of Canadian Government Publications*, a comprehensive listing of all official publications, public documents and papers not of a confidential nature published at government expense, an *Annual Catalogue* (in January) listing all publications issued during the previous year, as well as sectional catalogues and selected titles bulletins advertising new government publications.

Most provincial government publications may be obtained from the Queen's Printer of the province concerned. Inquiries should be addressed to the provincial capital cities:—

Newfoundland	St. John's	Ontario	Toronto
Prince Edward Island	Charlottetown	Manitoba	Winnipeg
Nova Scotia	Halifax	Saskatchewan	Regina
New Brunswick	Fredericton	Alberta	Edmonton
Quebec	Quebec	British Columbia	Victoria

Inquiries about the Yukon and Northwest Territories should be addressed to the Northern Administration Branch, Department of Northern Affairs and National Resources, Ottawa.

(Detailed Directory of Sources of Official Information follows, pp. 1192-1224.)

DIRECTORY OF SOURCES OF OFFICIAL INFORMATION

NOTE.—In the "Federal Data" column, the major source of information on each subject is given first; other sources follow in alphabetical order, with the exception of the National Film Board and the Dominion Bureau of Statistics which appear at the end of each listing with which they are concerned, except where they are the major source.

Sources for Federal Data	**Subject**	**Sources for Provincial Data**
Dept. of Agriculture Administration Branch Information Division Dept. of External Affairs (general requests originating in all countries outside Canada) Dept. of Fisheries Information and Educational Service Dept. of Forestry Dept. of Mines and Technical Surveys Editorial and Information Division Dept. of National Health and Welfare Information Services Dept. of Northern Affairs and National Resources Editorial and Information Division Dept. of Trade and Commerce Trade Publicity Branch National Film Board (films, filmstrips, photographs on all subjects) Dominion Bureau of Statistics	 BROAD GENERAL INFORMATION ON CANADA'S RESOURCES AND INSTITUTIONS	For broad general information in regard to particular provinces, application should be made to: **Nfld.**, Dept. of Provincial Affairs; **P.E.I.**, Tourist and Information Bureau; **N.S.**, Dept. of Provincial Secretary; **N.B.**, Dept. of Industry and Development or Dept. of Provincial Secretary-Treasurer or N.B. Travel Bureau; **Que.**, Dept. of Industry and Commerce, Bureau of Statistics, Provincial Tourist Bureau; **Ont.**, Dept. of Economics, Dept. of Commerce and Development, Dept. of Travel and Publicity; **Man.**, Dept. of Industry and Commerce or Dept. of Provincial Secretary; **Sask.**, Dept. of Industry and Information or Executive Council, or Economic Advisory and Planning Board; **Alta.**, Dept. of Industry and Development, Publicity Branch; **B.C.**, Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics.
Dept. of Agriculture Administration Branch Information Division Central Mortgage and Housing Corporation (mortgage loans for new farm houses) Dept. of Citizenship and Immigration Information Division Dept. of Finance (farm improvement loans) Dept. of Labour (farm workers) Dept. of Northern Affairs and National Resources (Yukon and N.W.T.) Dept. of Trade and Commerce Agricultural and Fisheries Branch Dept. of Veterans Affairs (veterans) Farm Credit Corporation (mortgage loans) National Film Board Dominion Bureau of Statistics	AGRICULTURE General and Farming	**Nfld.:**—Dept. of Mines, Agriculture, and Resources **P.E.I., N.S., N.B., Sask., Alta.:**—Depts. of Agriculture **Que.:**—Dept. of Agriculture, Information and Research Branch Dept. of Industry and Commerce Bureau of Statistics **Ont.:**—Dept. of Agriculture, Farm Economics and Statistics Branch and Information Branch **Man.:**—Dept. of Agriculture and Conservation **B.C.:**—Dept. of Agriculture Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics Dominion Bureau of Statistics (summaries of provincial data)
Dept. of Northern Affairs and National Resources Editorial and Information Branch Northern Administration Branch Dept. of Citizenship and Immigration Information Division (Indians) Dept. of Mines and Technical Surveys Editorial and Information Division Polar Continental Shelf Project Dominion Observatories Geological Survey of Canada Surveys and Mapping Branch Geographical Branch Dept. of National Defence Director of Public Relations Defence Research Board Dept. of National Health and Welfare Dept. of Public Works Northern Construction Division Dept. of Transport (airports, weather stations, navigation, re-supply operations) Information Services Fisheries Research Board of Canada National Research Council Division of Building Research (permafrost, buildings in the North, snow and ice) National Film Board	ARCTIC	**Sask.:**—Dept. of Natural Resources, Northern Administration District

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Mines and Technical Surveys Dominion Astrophysical Observatory, Victoria, B.C. Dominion Observatory, Ottawa, Ont. National Research Council Radio and Electrical Engineering Division (radio astronomy)	ASTRONOMY	**Que.:**—Office of Provincial Secretary Quebec Society of Astronomy **Sask.:**—University of Saskatchewan, Saskatoon **Alta.:**—University of Alberta, Edmonton
Atomic Energy of Canada Limited (research studies, sale of radio-isotopes) Atomic Energy Control Board (policy, regulations) Dept. of Mines and Technical Surveys Geological Survey of Canada Mines Branch Eldorado Mining and Refining Limited	ATOMIC ENERGY	**Ont.:**—Dept. of Energy Resources The Hydro-Electric Power Commission of Ontario **Man.:**—Dept. of Industry and Commerce, Manitoba Development Authority University of Manitoba, Physics Dept. **Sask.:**—University of Saskatchewan, Saskatoon **Alta.:**—Alberta Research Council, University of Alberta Campus, Edmonton **B.C.:**—University of British Columbia
Dept. of Transport Civil Aviation Branch (civil aviation control; airmen and aircraft licensing; provision of airports and air navigation facilities) Information Services Economics Policy Branch Dept. of Defence Production Aircraft Branch Dept. of Mines and Technical Surveys Legal Surveys and Aeronautical Charts Division Dept. of National Defence Directorate of Public Relations (RCAF) Dept. of National Health and Welfare Civil Aviation Medicine Division National Research Council National Aeronautical Establishment Trans-Canada Air Lines National Film Board Dominion Bureau of Statistics	AVIATION	**Que.:**—Quebec Government Air Services **Ont.:**—Dept. of Lands and Forests, Air Services **Man.:**—Manitoba Government Air Services **Sask.:**—Saskatchewan Government Airways
Bank of Canada Industrial Development Bank Central Mortgage and Housing Corporation Dept. of Finance (small businesses loans) Dept. of Insurance (for trust and loan business; also administers the Small Loans Act) Post Office Department, Savings Bank Dominion Bureau of Statistics	BANKING Trust and Loan Companies	**Nfld.:**—Dept. of Finance Supreme Court Registry of Deeds **P.E.I., N.S.:**—Dept. of Provincial Secretary **N.B.:**—Dept. of Provincial Secretary-Treasurer **Que.:**—Dept. of Finance, Insurance Branch Dept. of Industry and Commerce, Bureau of Statistics **Ont.:**—Province of Ontario Savings Office Dept. of Attorney-General Dept. of Insurance **Man.:**—Dept. of Provincial Secretary Manitoba Development Fund Manitoba Agricultural Credit Corporation **Sask.:**—Provincial Secretary, Registrar of Securities Dept. of Co-operation and Co-operative Development, Credit Union Services **Alta.:**—Treasury Dept., Superintendent of Treasury Branches **B.C.:**—Dept. of Finance, Inspector of Trust Companies

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Justice Superintendent of Bankruptcy Dominion Bureau of Statistics	BANKRUPTCY	**Nfld., P.E.I.:**—Dept. of Attorney General **Man., Sask.:**—Depts. of Provincial Secretary
National Library (information re books in libraries of federal departments and other Canadian libraries; information on current Canadian publications) Central Mortgage and Housing Corporation Information Division (publications on housing) Dept. of Public Printing and Stationery (information re prices, availability or otherwise, of all publications not confidential in nature, issued by Parliament and the various departments and agencies of the Government of Canada) National Research Council National Science Library (information re identification and location of scientific serials and research reports) Dominion Bureau of Statistics Information Services Division (for statistical publications)	BIBLIOGRAPHY	**Nfld.:**—Dept. of Education Public Libraries Board Dept. of Provincial Affairs, Archives **P.E.I.:**—Dept. of Education Superintendent of Libraries and Director of Adult Education Legislative Librarian **N.S., N.B.:**—Depts. of Education, Provincial Librarian **Que.:**—Office of Provincial Secretary Provincial Archives Provincial Library Dept. of Cultural Affairs **Ont.:**—Dept. of Education, Provincial Library Service Legislative Library **Man.:**—Dept. of Education, Provincial Librarian Dept. of Agriculture and Conservation Library Dept. of Health and Public Welfare Library **Sask.:**—Provincial Library Legislative Library **Alta.:**—Dept. of Provincial Secretary Library Board Provincial Library and Archives **B.C.:**—Dept. of Education Provincial Library and Archives Public Library Commission
	BIRTHS See "Vital Statistics"	
Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources (Yukon and N.W.T.)	BLINDNESS ALLOWANCES	Sources same as for "Old Age Assistance" excepting: **B.C.:**—Blind Persons Allowances Board
	BROADCASTING See "Radio"	

Sources for Federal Data	**Subject**	**Sources for Provincial Data**
Central Mortgage and Housing Corporation (NHA financing, house designs, apartment building standards) Canadian Government Specifications Board Canadian Standards Association Dept. of Defence Production Defence Construction (1951) Limited Dept. of Finance (Farm Improvement Loans Act) Dept. of National Health and Welfare Hospital Design Division Dept. of Northern Affairs and National Resources National Parks Branch Northern Administration Branch Dept. of Public Works Building Construction Branch Chief Architect and Information Services Dept. of Transport Air Services Construction Branch (airport terminal buildings, etc.) Information Services Dept. of Veterans Affairs (Soldier Settlement and Veterans' Land Act) Farm Credit Corporation National Research Council Division of Building Research (construction materials, building codes and practice, soil and snow mechanics, housing standards) Northern Canada Power Commission Dominion Bureau of Statistics	BUILDING CONSTRUCTION	**Nfld., N.B.:**—Dept. of Public Works **P.E.I.:**—Dept. of Industry and Natural Resources **N.S.:**—Dept. of Trade and Industry **Que.:**—Farm Credit Bureau, Family Housing Division Dept. of Industry and Commerce, Bureau of Statistics **Ont.:**—Dept. of Labour, Factory Inspection Branch Dept. of Commerce and Development, Housing Branch Dept. of Public Works Dept. of Municipal Affairs, Community Planning Branch **Man., Sask.:**—Depts. of Labour **Alta.:**—Dept. of Industry and Development, Alberta Bureau of Statistics Dept. of Labour **B.C.:**—Dept. of Finance, Housing Commissioner Dept. of Labour, Factory Inspection Branch Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Transport Marine Services (secondary canals) Information Services National Research Council Division of Mechanical Engineering St. Lawrence Seaway Authority (St. Lawrence–Great Lakes canals) Dominion Bureau of Statistics	CANALS	
Dept. of Trade and Commerce Commodities Branch Dominion Bureau of Statistics	CHEMICALS	**Que.:**—Dept. of Natural Resources **Ont.:**—Ontario Research Foundation
Dept. of Citizenship and Immigration Citizenship Branch Information Division National Gallery of Canada (federal) National Film Board	CITIZENSHIP *See also* "Population"	**Ont.:**—Dept. of Provincial Secretary and Citizenship
	CIVIL AVIATION *See* "Aviation"	
Dept. of Defence Production Emergency Supply Planning Branch Dept. of National Health and Welfare Emergency Health Services Emergency Welfare Services Royal Canadian Mounted Police	CIVIL DEFENCE	**Nfld.:**—Dept. of Provincial Affairs **P.E.I., N.S.:**—Depts. of Provincial Secretary **N.B.:**—Dept. of Municipal Affairs **Que.:**—Dept. of Social Welfare **Ont.:**—Dept. of Commerce and Development, Civil Defence Branch **Man.:**—Dept. of Industry and Commerce, Civil Defence Branch **Sask.:**—Emergency Measures Organization Executive Council **Alta.:**—Dept. of Agriculture **B.C.:**—Dept. of Provincial Secretary, Provincial Co-ordinator

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Transport Meteorological Branch, Toronto National Research Council Division of Building Research, (Climatological Atlas of Canada, National Building Code)	CLIMATE	**Que.:**—Dept. of Lands and Forests, Meteorological Bureau Dept. of Industry and Commerce, Bureau of Statistics **Ont.:**—Dept. of Agriculture, Farm Economics and Statistics Branch **B.C.:**—Dept. of Agriculture
Dept. of Mines and Technical Surveys Geological Survey of Canada Mines Branch Mineral Resources Division Dominion Coal Board Dominion Bureau of Statistics	COAL	**N.S., Ont.:**—Depts. of Mines **N.B.:**—Dept. of Lands and Mines **Que.:**—Dept. of Natural Resources **Man.:**—Dept. of Mines and Natural Resources, Mines Branch **Sask.:**—Dept. of Mineral Resources **Alta.:**—Dept. of Mines and Minerals Alberta Research Council **B.C.:**—Dept. of Mines and Petroleum Resources
Dept. of Justice Director of Investigation and Research Restrictive Trade Practices Commission	COMBINES	
Dept. of Transport Telecommunications Branch (radio communications; aviation radio and marine radio; telegraph and telephone services in remote areas) Information Services Board of Transport Commissioners (regulation of certain telegraph and telephone companies) Canadian Broadcasting Corporation (national television and radio network and international short-wave service) Canadian Overseas Telecommunication Corporation Dept. of Northern Affairs and National Resources Northern Administration Branch (wireless communications in the Yukon and N.W.T.) National Parks Branch (telephones in National Parks) Dept. of Trade and Commerce Transportation and Trade Services Division Dominion Bureau of Statistics	COMMUNICATIONS *For* Post Office *and* Mail *see* "Post Office"	**Nfld.:**—Dept. of Economic Development Board of Public Utilities **P.E.I.:**—Tourist and Information Bureau **N.S.:**—Board of Commissioners of Public Utilities **N.B.:**—Travel Bureau **Que.:**—Dept. of Transportation and Communications **Ont.:**—Ontario Telephone Service Commission Ontario Provincial Police, Radio Communications Branch **Man.:**—Manitoba Telephone System **Sask.:**—Dept. of Telephones Saskatchewan Government Telephones **Alta.:**—Alberta Government Telephones **B.C.:**—Dept. of Commercial Transport RCMP Provincial Headquarters

Sources for Federal Data	Subject	Sources for Provincial Data
Central Mortgage and Housing Corporation Dept. of National Health and Welfare (social welfare and recreation) Dept. of Northern Affairs and National Resources Northern Administration Branch National Capital Commission Information Division (general information on the Plan for the National Capital of Canada) National Film Board	COMMUNITY PLANNING	**Nfld.:**—Dept. of Municipal Affairs and Supply **P.E.I.:**—Dept. of Industry and Natural Resources Dept. of Education, Physica Fitness Division **N.S.:**—Dept. of Municipal Affairs **N.B.:**—Dept. of Education, Physical Education and Recreational Branch Dept. of Municipal Affairs **Que.:**—Dept. of Municipal Affairs Industrial Development Bureau Economic Advisory Council **Ont.:**—Dept. of Municipal Affairs, Community Planning Branch Dept. of Education, Community Programs Branch **Sask.:**—Dept. of Municipal Affairs, Community Planning Branch Executive Council, Economic Advisory and Planning Board Centre for Community Studies, University of Saskatchewan, Saskatoon **Alta.:**—Dept. of Municipal Affairs, Town and Rural Planning Branch **B.C.:**—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics Dept. of Municipal Affairs, Regional Planning Division Dept. of Education, Community Programs Branch Lower Mainland Regional Planning Board
Dept. of Northern Affairs and National Resources National Parks Branch, Canadian Wildlife Service Northern Administration Branch Resources for Tomorrow Conference Secretariat Dept. of Agriculture Information Division Economics Division Prairie Farm Rehabilitation Administration Maritime Marshlands Rehabilitation Administration Dept. of Fisheries Information and Educational Service Dept. of Forestry National Capital Commission National Film Board	CONSERVATION	**Nfld.:**—Dept. of Mines, Agriculture, and Resources **P.E.I.:**—Dept. of Industry and Natural Resources **N.S., Alta.:**—Depts. of Lands and Forests **N.B.:**—Dept. of Lands and Mines **Que.:**—Dept. of Lands and Forests Dept. of Game and Fisheries Dept. of Natural Resources **Ont.:**—Dept. of Lands and Forests Dept. of Commerce and Development, Conservation Branch Ontario Agricultural College, Guelph **Man.:**—Dept. of Mines and Natural Resources **Sask.:**—Dept. of Natural Resources Dept. of Agriculture, Conservation and Development Branch **B.C.:**—Dept. of Lands and Forests Dept. of Recreation and Conservation
Privy Council Office Dept. of Justice Dept. of Secretary of State Public Archives	CONSTITUTION	**All Provinces except B.C.:**—Depts. of Attorney General **B.C.:**—Provincial Secretary
Dominion Bureau of Statistics	CONSUMER PRICE INDEX *See also* "Cost of Living"	

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Agriculture Administration Branch Economics Division Central Mortgage and Housing Corporation (mortgage-lending activities) Dept. of Fisheries Information and Educational Service Dept. of Insurance Dept. of Northern Affairs and National Resources Northern Administration Branch (Eskimo co-operatives) Dept. of Secretary of State Companies Division	CO-OPERATIVES (including Credit Unions)	**Nfld.:**—Dept. of Mines, Agriculture, and Resources **P.E.I., N.S.:**—Depts. of Provincial Secretary **N.B.:**—Dept. of Agriculture **Que.:**—Dept. of Agriculture Dept. of Industry and Commerce, Bureau of Statistics **Ont.:**—Dept. of Agriculture, Markets Branch Dept. of Provincial Secretary Dept. of Insurance **Man.:**—Dept. of Agriculture and Conservation, Co-operative Services Branch **Sask.:**—Dept. of Co-operation and Co-operative Development **Alta.:**—Dept. of Industry and Development, Co-operative Activities Branch **B.C.:**—Attorney-General's Dept., Registrar of Companies
Dominion Bureau of Statistics (wholesale and retail prices and consumer price index)	COST OF LIVING	**Nfld.:**—Dept. of Municipal Affairs and Supply **Ont.:**—Dept. of Economics, Economic Statistics Branch **Sask.:**—Dept. of Labour **Alta.:**—Dept. of Industry and Development, Alberta Bureau of Statistics **B.C.:**—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Canada Council Dept. of Citizenship and Immigration Information Division (Indians and immigrants) Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources National Parks Branch National Museum of Canada Northern Administration Branch Dept. of Trade and Commerce Commodities Branch Dept. of Veterans Affairs (veterans only) National Gallery of Canada (films, reference library) Public Archives National Film Board	CREATIVE ARTS AND HANDICRAFTS	**Nfld.:**—Dept. of Education **P.E.I.:**—Dept. of Provincial Secretary, Tourist and Information Branch Dept. of Education, Physical Fitness Division **N.S.:**—Dept. of Trade and Industry, Handicrafts Division Nova Scotia College of Art Dept. of Education, Physical Fitness Division **N.B.:**—Dept. of Industry and Development, Handicraft Division The New Brunswick Museum Dept. of Education, Physical Education and Recreation Branch **Que.:**—Dept. of Cultural Affairs Dept. of Agriculture (rural handicrafts) Office of Provincial Secretary Dept. of Industry and Commerce **Ont.:**—Dept. of Education, Community Programs Branch Dept. of Agriculture, Home Economics Service **Man.:**—Dept. of Agriculture and Conservation, Extension Service **Sask.:**—Dept. of Education, Adult Education Division and Fitness and Recreation Division Saskatchewan Arts Board **Alta.:**—Dept. of Provincial Secretary (cultural activities) **B.C.:**—Provincial Museum (Indian handicrafts) Dept. of Education, Community Programs Branch Dept. of Industrial Development, Trade, and Commerce

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Justice Clemency Branch The Penitentiary Commission National Parole Board Dept. of National Health and Welfare Research and Statistics Division National Film Board Dominion Bureau of Statistics	CRIME AND DELINQUENCY	**All Provinces:**—Depts. of Attorney General *Additional:*—**Nfld., N.S., Alta.:**—Depts. of Public Welfare **P.E.I.:**—Dept. of Welfare and Labour **Que.:**—Dept. of Social Welfare Dept. of Youth Dept. of Industry and Commerce, Bureau of Statistics **Ont.:**—Dept. of Reform Institutions **Sask.:**—Dept. of Social Welfare and Rehabilitation **B.C.:**—Dept. of Social Welfare
See pp. 104-112 of this volume for a list of Crown corporations giving the functions of each and the Cabinet Minister through which each reports to Parliament.	CROWN CORPORATIONS	For information with regard to individual Crown corporations apply as follows:— **Nfld.:**—Dept. of Economic Development **P.E.I.:**—Dept. of Industry and Natural Resources **N.S.:**—Dept. of Trade and Industry **Ont.:**—Dept. of Provincial Secretary **Man.:**—Treasury Dept. **Sask.:**—Government Finance Office **Alta.:**—Dept. of Industry and Development **B.C.:**—Attorney-General's Dept.
Bank of Canada Dept. of Finance Royal Canadian Mint	CURRENCY	
Dept. of Agriculture Production and Marketing Branch Dairy Products Division Health of Animals Division Research Branch Animal Research Institute Dairy Technology Research Institute Dept. of Trade and Commerce Agriculture and Fisheries Branch National Film Board Dominion Bureau of Statistics	DAIRYING	**Nfld.:**—Dept. of Mines, Agriculture, and Resources **P.E.I., N.S.:**—Depts. of Agriculture **N.B., Ont., Alta., B.C.:**—Depts. of Agriculture, Dairy Branches (*also* Milk Industry Board of Ont. and Milk Control Board for B.C.) **Que.:**—Dept. of Agriculture, Dairy Commission Dept. of Industry and Commerce, Bureau of Statistics **Man.:**—Dept. of Agriculture and Conservation Dairy Branch Milk Control Board **Sask.:**—Dept. of Agriculture, Animal Industry Branch Milk Control Board
	DEATHS See "Vital Statistics"	
Dept. of National Defence Director of Public Relations Directorate of Naval Information Directorate of Public Relations (Army) Directorate of Public Relations (RCAF) Defence Research Board Dept. of Defence Production Canadian Commercial Corporation Defence Construction (1951) Limited Canadian Arsenals Limited Dept. of External Affairs (NATO) Privy Council Office Emergency Measures Organization	DEFENCE *See also* "Civil Defence"	

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Defence Production	DEFENCE PRODUCTION	
Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources (Yukon and N.W.T.) Dept. of Veterans Affairs (war disabled veterans)	DISABLED PERSONS ALLOWANCES	**Nfld.**:—The Old Age Assistance Board **P.E.I.**:—Director of Disabled Persons Allowances, Dept. of Welfare and Labour **N.B.**:—Director of Disabled Persons Allowances **N.S.**:—Director of Old Age Assistance **Que.**:—Quebec Social Allowances Commission **Ont.**:—Dept. of Public Welfare, Welfare Allowance Branch **Man.**:—The Old Age Assistance and Blind Persons' Allowances Board **Sask.**:—Dept. of Social Welfare and Rehabilitation, Director of Public Assistance **Alta.**:—Dept. of Public Welfare, Pensions Board **B.C.**:—The Disabled Persons Allowances Board
Bank of Canada Central Mortgage and Housing Corporation Dept. of Agriculture Economics Division Dept. of Citizenship and Immigration Canadian Citizenship Branch Dept. of Defence Production Economics and Statistics Branch Dept. of Fisheries Economics Service Dept. of Forestry Economics Division Dept. of Labour Economics and Research Branch Legislation Branch Dept. of Mines and Technical Surveys Mineral Resources Division Dept. of National Health and Welfare Research and Statistics Division Dept. of Northern Affairs and National Resources (forest and water resources and resources of Yukon and Northwest Territories) Administration Services Northern Administration Branch Water Resources Branch Dept. of Public Works Economic Studies Branch Dept. of Trade and Commerce Economics Branch Dept. of Transport Economics Policy Branch Fisheries Research Board Public Archives (early data) Dominion Bureau of Statistics	ECONOMIC AND SOCIAL RESEARCH	**Nfld.**:—Dept. of Economic Development **P.E.I.**:—Dept. of Industry and Natural Resources **N.S.**:—Dept. of Trade and Industry Nova Scotia Research Foundation **N.B., Alta.**:—Depts. of Industry and Development **Que.**:—Dept. of Industry and Commerce, Economic and Scientific Research Bureau, Bureau of Statistics, Industrial Commission Branch **Ont.**:—Dept. of Economics Dept. of Agriculture, Farm Economics and Statistics Branch Dept. of Municipal Affairs, Community Planning Branch Alcoholism Research Foundation **Man.**:—Dept. of Industry and Commerce **Sask.**:—Executive Council Economic Advisory and Planning Board Dept. of Industry and Information Government Finance Office Dept. of Co-operation and Co-operative Development, Research and Statistical Division Centre for Community Studies, University of Saskatchewan, Saskatoon **B.C.**:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Sources for Federal Data	Subject	Sources for Provincial Data
Dominion Bureau of Statistics Canada Council Canadian Broadcasting Corporation (children's, school and adult educational broadcasts) Dept. of Citizenship and Immigration Citizenship Branch (immigrants) Information Division (Indians) Dept. of Finance (university grants) Dept. of Fisheries Information and Educational Service Dept. of Labour Vocational Training Branch Dept. of National Defence Director of Education (service dependants' schools) Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources Northern Administration Branch (Yukon and N.W.T.) Dept. of Veterans Affairs (veterans and children of war dead) National Gallery of Canada (school broadcasts, lectures on art)	EDUCATION See *also* "Motion Pictures" *and* "Photographic Material"	**All Provinces**:—Depts. of Education (technical, visual, audio and all other phases of education) *Additional*:—**Alta.**: Dept. of Labour, Apprenticeship Board
Chief Electoral Office	ELECTIONS	**Nfld.**:—Dept. of Provincial Affairs **P.E.I., N.S.**:—Depts. of Provincial Secretary **N.B.**:—Dept. of Provincial Secretary-Treasurer **Que.**:—Chief Returning-Officer **Ont.**:—Dept. of Provincial Secretary, Chief Election Officer **Man., B.C.**:—Chief Electoral Officers **Sask., Alta.**:—Clerks of the Executive Councils
Dept. of Northern Affairs and National Resources Water Resources Branch National Energy Board National Research Council Radio and Electrical Engineering Division Northern Canada Power Commission National Film Board Dominion Bureau of Statistics	ELECTRIC POWER	**Nfld.**:—Dept. of Economic Development, Power Commission **P.E.I.**:—Public Utility Commission **N.S., Alta.**:—Power Commissions **N.B.**:—New Brunswick Electric Power Commission **Que.**:—Hydro-Electric Commission Dept. of Natural Resources Dept. of Agriculture, Rural Electrification Bureau **Ont.**:—Dept. of Energy Resources The Hydro-Electric Power Commission of Ontario **Man.**:—Manitoba Hydro Dept. of Public Utilities **Sask.**:—Saskatchewan Power Corporation **B.C.**:—Dept. of Lands and Forests British Columbia Power Commission British Columbia Energy Board Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Labour Economics and Research Branch Civil Service Commission (opportunities for, and conditions of employment in the Federal Civil Service) Dept. of Citizenship and Immigration Information Division (immigrants) National Employment Service Dominion Bureau of Statistics	EMPLOYMENT	**All Provinces**:—Depts. of Agriculture (farm labour) *Additional*:—**Nfld., N.S., Man., Sask.**:—Depts. of Labour **Que.**:—Dept. of Labour, Provincial Employment Bureau **Ont.**:—Dept. of Economics, General Economics Branch Dept. of Labour Civil Service Commission **Alta.**:—Dept. of Labour Dept. of Industry and Development **B.C.**:—Dept. of Labour Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Northern Affairs and National Resources Northern Administration Branch (education, welfare, handicrafts, livelihood) National Museum of Canada (historical and archaeological information, handicrafts) Canadian Wildlife Service (wildlife in Canada's North) Dept. of National Health and Welfare (health and hospital services) Royal Canadian Mounted Police (field duties)	ESKIMOS	**Nfld.**:—Dept. of Public Welfare, Division of Northern Labrador Affairs
Dept. of Trade and Commerce Canadian Government Exhibition Commission Design Branch Trade Publicity Branch Central Mortgage and Housing Corporation (exhibits on various aspects of housing and its environment) Dept. of Agriculture Administration Branch Information Division Dept. of Fisheries Information and Educational Service Dept. of Mines and Technical Surveys Editorial and Information Division Mineral Resources Division Dept. of National Health and Welfare Information Division Dept. of Northern Affairs and National Resources Canadian Government Travel Bureau (sportsmen's shows) Editorial and Information Division National Capital Commission Plan for the National Capital of Canada (exhibits and information) National Gallery of Canada (paintings, etc.) National Film Board (films, photographs)	EXHIBITIONS	**Nfld.**:—Dept. of Provincial Affairs **P.E.I., N.S., N.B.**:—Depts. of Agriculture **Que.**:—Dept. of Agriculture Dept. of Industry and Commerce Office of Provincial Secretary Dept. of Cultural Affairs **Ont.**:—Most Ontario Departments organize exhibitions **Man.**:—Dept. of Agriculture and Conservation, Extension Service Dept. of Industry and Commerce **Sask.**:—Dept. of Agriculture Dept. of Industry and Information **Alta.**:—Dept. of Provincial Secretary Dept. of Agriculture **B.C.**:—Dept. of Agriculture Dept. of Industrial Development Trade, and Commerce
Dept. of Defence Production Ammunition Branch Canadian Arsenals Limited Dept. of Mines and Technical Surveys Explosives Division Mines Branch Explosives Laboratory	EXPLOSIVES	**Alta.**:—Dept. of Mines and Minerals **B.C.**:—Dept. of Mines and Petroleum Resources
Dept. of External Affairs	EXTERNAL AFFAIRS	
Dept. of National Health and Welfare Dept. of Citizenship and Immigration (assistance to families entering Canada not yet eligible for family allowances)	FAMILY ALLOWANCES	

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Agriculture Production and Marketing Branch Plant Products Division Plant Protection Division Research Branch Genetics and Plant Breeding Research Institute Plant Research Institute Dept. of Trade and Commerce Agriculture and Fisheries Branch National Film Board Dominion Bureau of Statistics	FIELD CROPS	**Nfld.:**—Dept. of Mines, Agriculture, and Resources **P.E.I., N.S., N.B.:**—Depts. of Agriculture **Que.:**—Dept. of Agriculture Dept. of Industry and Commerce, Bureau of Statistics **Ont., Alta., B.C.:**—Depts. of Agriculture, Field Crops Branch **Man.:**—Dept. of Agriculture and Conservation, Soils and Crops Branch **Sask.:**—Dept. of Agriculture, Plant Industry Branch
Dept. of Finance Bank of Canada Dominion Bureau of Statistics	FINANCE *See also* "Taxation"	**Nfld., B.C.:**—Depts. of Finance **P.E.I., Sask.:**—Provincial Treasurers **N.S.:**—Dept. of Provincial Treasurer **N.B.:**—Dept. of Provincial Secretary-Treasurer **Que.:**—Dept. of Finance Dept. of Industry and Commerce, Bureau of Statistics **Ont.:**—Treasury Dept. Dept. of Economics, Finance Branch **Man., Alta.:**—Provincial Treasury Depts.
Dept. of Forestry Forest Research Branch Board of Transport Commissioners (forest-fire protection along railway lines) Dept. of Northern Affairs and National Resources National Parks Branch Northern Administration Branch Dept. of Public Works Fire Prevention Branch (fire loss statistics) National Research Council Fire Research Section National Film Board (films, filmstrips, photographs, in relation to government prevention and conservation programs)	FIRE PREVENTION	**All Provinces:** — Provincial Fire Marshals (for urban and rural fire losses) *Additional:*— **Nfld.:** — Dept. of Mines, Agriuclture, and Resources **P.E.I.:**—Dept. of Industry and Natural Resources **N.S., Alta., B.C.:**—Depts. of Lands and Forests **N.B.:**—Dept. of Lands and Mines **Que.:**—Dept. of Lands and Forests Forest Protection Service Dept. of Public Works, Fire Commissioner **Ont.:**—Dept. of Lands and Forests, Forest Protection Division Dept. of Attorney-General, Office of the Fire Marshal **Man.:**—Dept. of Mines and Natural Resources Dept. of Labour, Fire Commissioner **Sask.:**—Dept. of Natural Resources Dept. of Labour, Fire Commissioner
Dept. of Fisheries Information and Educational Service Fisheries Research Board of Canada Canadian Broadcasting Corporation Farm and Fisheries Department Dept. of Finance Fisherman's Improvement Loans Dept. of Northern Affairs and National Resources Northern Administration Branch (Eskimo fishing co-operatives) Dept. of Trade and Commerce Agriculture and Fisheries Branch Dept. of Veterans Affairs (veterans settled as commercial fishermen) Unemployment Insurance Commission (unemployment insurance for fishermen) National Film Board	FISHERIES	**Nfld., P.E.I.:**—Depts. of Fisheries **N.S.:**—Dept. of Trade and Industry, Fisheries Division **N.B.:**—Dept. of Industry and Development, Fisheries Branch **Que.:**—Dept. of Game and Fisheries Dept. of Industry and Commerce, Bureau of Statistics **Ont.:**—Dept. of Lands and Forests, Fish and Wildlife Division **Man.:**—Dept. of Mines and Natural Resources, Fisheries Branch **Sask.:**—Dept. of Natural Resources, Fisheries Branch **Alta.:**—Dept. of Lands and Forests, Fish and Game Branch **B.C.:**—Dept. of Recreation and Conservation

Sources for Federal Data	Subject	Sources for Provincial Data
	FOOD AND DRUGS *See* "Standards" *and* "Nutrition"	
	FOREIGN AFFAIRS *See* "External Affairs"	
Dept. of Finance Bank of Canada	FOREIGN EXCHANGE	
Dept. of Forestry Economics Division Forest Research Branch Forest Entomology and Pathology Branch Dept. of Trade and Commerce Commodities Branch National Film Board Dominion Bureau of Statistics	FOREST RESOURCES	**Nfld.:**—Dept. of Mines, Agriculture, and Resources **P.E.I.:**—Dept. of Industry and Natural Resources **N.S., Que., Ont., Alta., B.C.:**—Depts. of Lands and Forests **N.B.:**—Dept. of Lands and Mines **Man.:**—Dept. of Mines and Natural Resources, Forestry Branch **Sask.:**—Dept. of Natural Resources, Forestry Branch
	FRUIT *See* "Horticulture"	
	FUEL *See* "Coal", "Oil and Natural Gas" "Forest Resources"	
Dept. of Agriculture Production and Marketing Branch Livestock Division (grading) Research Branch (production) Dept. of Trade and Commerce Agriculture and Fisheries Branch Dominion Bureau of Statistics	FUR FARMING *See also* "Trapping"	**Nfld.:**—Dept. of Mines, Agriculture, and Resources Dept. of Economic Development **P.E.I., N.B., Alta., B.C.:**—Depts. of Agriculture **N.S., Ont.:**—Depts. of Lands and Forests **Que.:**—Dept. of Agriculture Dept. of Industry and Commerce, Bureau of Statistics **Man.:**—Dept. of Mines and Natural Resources, Game Branch **Sask.:**—Dept. of Natural Resources Saskatchewan Fur Marketing Service

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Mines and Technical Surveys Canadian Board on Geographical Names Dept. of Agriculture Soils Research Institute Dept. of Fisheries Fisheries Research Board of Canada (oceanography) Public Archives National Film Board	GEOGRAPHY	**Nfld.:**—Dept. of Mines, Agriculture, and Resources **P.E.I.:**—Travel Bureau **N.S.:**—Dept. of Mines **N.B.:**—Dept. of Lands and Mines **Que.:**—Dept. of Lands and Forests Dept. of Industry and Commerce Economic and Scientific Research Bureau Economic Cartography Service Dept. of Natural Resources **Ont.:**—Dept. of Lands and Forests, Surveys Division Dept. of Mines Ontario Agricultural College, Department of Soils Dept. of Economics, Economic Statistics Branch Dept. of Municipal Affairs, Community Planning Branch **Man.:**—Dept. of Mines and Natural Resources **Sask.:**—Dept. of Natural Resources Dept. of Industry and Information **Alta.:**—Dept. of Lands and Forests University of Alberta **B.C.:**—Dept. of Lands and Forests
Dept. of Mines and Technical Surveys Geological Survey of Canada	GEOLOGY	**Nfld.:**—Dept. of Mines, Agriculture, and Resources **P.E.I.:**—Dept. of Industry and Natural Resources **N.S., B.C.:**—Depts. of Mines **N.B.:**—Dept. of Lands and Mines **Que.:**—Dept. of Natural Resources, Geological Surveys Branch Dept. of Agriculture **Ont.:**—Dept. of Mines, Geological Branch **Man.:**—Dept. of Mines and Natural Resources, Mines Branch **Sask.:**—Dept. of Mineral Resources **Alta.:**—Dept. of Mines and Minerals
Dept. of the Secretary of State (federal-provincial channel of communication) Chief Electoral Office (Electoral Act and voters lists) Dept. of Citizenship and Immigration Citizenship Branch (publications) Information Division Dept. of Northern Affairs and National Resources (Yukon and N.W.T.) Dept. of Public Printing and Stationery (distribution and sale of statutory orders and regulations) Privy Council Office (appointments, orders in council, statutory orders and regulations) Public Archives (early official records)	GOVERNMENT *For* Senate of Canada, House of Commons *and* Library of Parliament *see* "Parliament"	**Nfld.:**—Dept. of Provincial Affairs **P.E.I., N.S., Ont., Man., Sask., Alta., B.C.:**—Depts. of Provincial Secretary **N.B.:**—Dept. of Provincial Secretary-Treasurer **Que.:**—Office of Provincial Secretary
Dept. of National Health and Welfare National Film Board Dominion Bureau of Statistics	HEALTH *For* Health of Veterans *see* "Veterans Affairs"	**Nfld., P.E.I., Que., Ont.:**—Depts. of Health **N.S., Sask., Alta.:** — Depts. of Public Health **N.B.:**—Dept. of Health and Social Services **Man.:**—Dept. of Health and Public Welfare **B.C.:**—Dept. of Health Services and Hospital Insurance
	HIGHWAYS *See* "Transportation"	

Sources for Federal Data	Subject	Sources for Provincial Data
Public Archives Dept. of National Defence Director of Public Relations Naval Historian Directorate of History (Army) Air Historian Dept. of Northern Affairs and National Resources National Parks Branch (historic sites and monuments) National Museum of Canada Canadian War Museum National Aviation Museum Dept. of Veterans Affairs (war memorials) National Gallery of Canada (provincial and federal) National Film Board Dominion Bureau of Statistics	HISTORY	**Nfld.**:—Legislative Library Memorial University Gosling Memorial Library Dept. of Provincial Affairs, Public Archives and Museum **P.E.I.**:—Travel Bureau, Legislative Librarian **N.S.**:—Public Archives **N.B.**:—Legislative Library **Que.**:—Office of Provincial Secretary, Provincial Archives Provincial Library Dept. of Cultural Affairs **Ont.**:—Legislative Library Dept. of Travel and Publicity, Public Records and Archives and Historical Branch **Man.**:—Provincial Library and Archives **Sask.**:—Legislative Library, Archives Division **Alta.**:—Archives, Provincial Library Dept. of Industry and Development, Publicity Bureau **B.C.**:—Dept. of Education, Provincial Librarian and Archivist
Dept. of Agriculture Production and Marketing Branch (grading and inspection) Fruit and Vegetable Division Plant Products Division Plant Protection Division Research Branch Genetics and Plant Breeding Research Institute Plant Research Institute	HORTICULTURE	**Nfld.**:—Dept. of Mines, Agriculture, and Resources **P.E.I., Ont.**:—Depts. of Agriculture **N.S., N.B., Alta., B.C.**:—Depts. of Agriculture, Horticultural Branches **Que.**:—Dept. of Agriculture, Fruit Branch **Man.**:—Dept. of Agriculture and Conservation **Sask.**:—Dept. of Agriculture, Plant Industry Branch
Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources Northern Administration Branch (Yukon and N.W.T.) Dominion Bureau of Statistics	HOSPITAL INSURANCE	**Nfld., P.E.I., Que.**:—Depts. of Health **N.S.**:—Hospital Services Planning Commission **N.B.**:—Hospital Services Commission **Ont.**:—Ontario Hospital Services Commission **Man.**:—Hospital Services Plan **Sask., Alta.**:—Depts. of Public Health **B.C.**:—Dept. of Health Services and Hospital Insurance
Dept. of National Health and Welfare Dept. of National Defence Office of the Surgeon General (Armed Forces hospitals) Dept. of Veterans Affairs (veterans hospitals) Dominion Bureau of Statistics	HOSPITALS	**Nfld., P.E.I., Que.**:—Depts. of Health **N.S.**:—Hospital Services Commission **N.B.**:—Dept. of Health and Social Services **Ont.**:—Ontario Hospital Services Commission **Man.**:—Dept. of Health and Public Welfare **Sask., Alta.**:—Depts. of Public Health **B.C.**:—Dept. of Health Services and Hospital Insurance
	HOUSE OF COMMONS See "Parliament"	

Sources for Federal Data	**Subject**	**Sources for Provincial Data**
Central Mortgage and Housing Corporation (long-term mortgage loans for new houses and low-rental housing projects; National Housing Act financing; loans to universities for resident student accommodation; loans to municipalities for sewage treatment projects; mortgage lending and secondary mortgage market activities; insurance of loans) Dept. of Northern Affairs and National Resources Northern Administration Branch (Eskimo housing) Dept. of Veterans Affairs (home construction assistance for veterans) Dominion Bureau of Statistics	HOUSING	**Nfld.:**—Dept. of Municipal Affairs **P.E.I.:**—Dept. of Industry and Natural Resources **N.S.:**—Nova Scotia Housing Commission **Que.:**—Dept. of Agriculture Quebec Farm Credit Bureau **Ont.:**—Dept. of Commerce and Development, Housing Branch **Sask.:**—Dept. of Social Welfare, Housing Branch **B.C.:**—Dept. of Finance, Housing Commissioner
Dept. of Citizenship and Immigration Information Division Dept. of National Health and Welfare Quarantine, Immigration Medical and Sick Mariners Division National Gallery of Canada (provincial and federal) National Film Board Dominion Bureau of Statistics	IMMIGRATION	**P.E.I.:**—Dept. of Industry and Natural Resources **Ont.:**—Dept. of Economics, General Economics Branch Dept. of Commerce and Development **Man.:**—Dept. of Agriculture and Conservation **Sask.:**—Dept of Social Welfare **Alta.:**—Dept. of Industry and Development **B.C.:**—British Columbia House, London, England
	INCOME TAX See "Taxation"	
Dept. of Citizenship and Immigration Information Division Dept. of National Health and Welfare (health and hospital services) Dept. of Northern Affairs and National Resources Northern Administration Branch National Museum of Canada (historical and archaeological information)	INDIANS	**Nfld.:**—Dept. of Public Welfare (Indians in Labrador) **Que.:**—Dept. of Fish and Game (fur preserves) **Ont.:**—Dept. of Public Welfare **Man.:**—Dept. of Health and Public Welfare, Community Development Program **Sask.:**—Provincial Committee on Minority Groups Executive Council **B.C.:**—Dept. of Labour, Provincial Advisory Committee on Indian Affairs
Dept. of Trade and Commerce	INDUSTRIAL DESIGN	
	INDUSTRIAL DEVELOPMENT See "Manufacturing"	

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Insurance (Dominion, British and foreign companies, Federal Civil Service insurance) Central Mortgage and Housing Corporation (insures loans made under National Housing Act 1954) Dept. of Labour Annuities Branch Dept. of Trade and Commerce Export Credits Insurance Corporation Dept. of Veterans Affairs Veterans Welfare Services (Veterans Insurance Division) Dominion Bureau of Statistics (summary statistics of all types of insurance)	INSURANCE—LIFE, FIRE, ETC. *For* Unemployment Insurance *see* "Labour"	**Nfld.:**—Dept. of Provincial Affairs **P.E.I., N.S., N.B., Alta., B.C.:**—Superintendents of Insurance **Que.:**—Finance Dept., Insurance Branch **Ont.:**—Dept. of Insurance **Man.:**—Superintendent of Insurance Manitoba Crop Insurance Agency **Sask.:**—Superintendent of Insurance, Government Insurance Office
Dept. of Mines and Technical Surveys Mines Branch Mineral Resources Division Dept. of Trade and Commerce Commodities Branch Dominion Bureau of Statistics	IRON AND STEEL	**Nfld.:**—Dept. of Mines, Agriculture, and Resources **N.S.:**—Dept. of Mines Research Foundation **N.B.:**—Dept. of Lands and Mines **Que.:**—Dept. of Industry and Commerce, Bureau of Statistics Dept. of Natural Resources **Ont.:**—Dept. of Commerce and Development, Trade and Industry Branch Dept. of Economics, Economic Statistics Branch **Man.:**—Dept. of Industry and Commerce **Sask.:**—Dept. of Mineral Resources **Alta.:**—Dept. of Mines and Minerals Dept. of Industry and Development **B.C.:**—Dept. of Mines and Petroleum Resources Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Justice Dept. of Northern Affairs and National Resources (Yukon and N.W.T.) Dominion Bureau of Statistics	JUSTICE	**All Provinces:**—Depts. of Attorney General
Dept. of Labour Information Branch Labour Gazette Branch Government Annuities Branch Legislation Branch Economics and Research Branch Canada Labour Relations Board Vocational Training Branch Civilian Rehabilitation Branch Industrial Relations Branch (conciliation of labour disputes, payment of air wages on government contracts, promotion of labour-management co-operation, fair employment practices) International Labour Organization Branch Special Services Branch Women's Bureau Dept. of National Health and Welfare (occupational health) Dept. of Northern Affairs and National Resources (Yukon and N.W.T.) Dept. of Secretary of State Companies Division National Employment Service Unemployment Insurance Commission Dominion Bureau of Statistics	LABOUR *See also* "Workmen's Compensation"	**Nfld., P.E.I., N.S., N.B., Man., Sask., Alta.:**—Depts. of Labour **Que.:**—Dept. of Labour Provincial Bureau of Statistics Economic and Scientific Research Bureau **Ont.:**—Dept. of Labour Dept. of Economics **B.C.:**—Dept. of Labour Dept. of Industrial Development Trade, and Commerce, Bureau of Economics and Statistics

Sources for Federal Data	**Subject**	**Sources for Provincial Data**
Dept. of Mines and Technical Surveys Surveyor General of Canada Dept. of Agriculture Prairie Farm Rehabilitation Administration Dept. of Citizenship and Immigration Information Division (land settlement) Dept. of Northern Affairs and National Resources Northern Administration Branch (Yukon and N.W.T.) Dept. of Transport Real Estate Branch Dept. of Veterans Affairs Soldier Settlement and Veterans' Land Act Branch	LANDS AND LAND SETTLEMENT	**Nfld.**:—Dept. of Mines, Agriculture, and Resources **P.E.I.**:—Commissioner of Public Lands **N.S.**:—Dept. of Agriculture, Land Settlement Board **N.B.**:—Dept. of Lands and Mines **Que.**:—Dept. of Lands and Forests Dept. of Colonization **Ont., Alta.**:—Depts. of Lands and Forests **Man.**:—Dept. of Mines and Natural Resources, Lands Branch **Sask.**:—Dept. of Agriculture, Lands Branch Attorney General, Land Titles **B.C.**:—Dept. of Agriculture, Land Clearing Dept. of Lands and Forests
Royal Canadian Mounted Police (*Enforces Federal Statutes in all parts of Canada; in the provinces, exclusive of Quebec and Ontario, it carries out on behalf of Attorneys General and under contract, enforcement of the Criminal Code and Provincial Statutes and polices a number of cities, towns and municipalities; is the only law-enforcement body in the Yukon and Northwest Territories and assists in the welfare of Eskimos and Indians in these Territories.*)	LAW ENFORCEMENT	**All Provinces**:—Depts. of Attorney General
Clerk of the Senate of Canada Clerk of the House of Commons Dept. of Justice Dept. of Northern Affairs and National Resources (Yukon and N.W.T.) Dept. of Public Printing and Stationery (distribution and sale of the Statutes of Canada and separate texts of federal legislation) Privy Council Office For Acts administered by individual Federal Depts., see pp. 112-117 of this volume.	LEGISLATION *For* Statutory Orders and Regulations *see* "Government"	**All Provinces except Man. and B.C.**:—Depts. of Attorney General *Additional:*—**Ont.**:—The Queen's Printer (distribution and sale of the Statutes of Ontario and various Acts) **Man.**:—Legislative Council **B.C.**:—Dept. of Provincial Secretary
	LIBRARIES *See* "Bibliography"	
Chief Electoral Office (for local referendum under Canada Temperance Act) Dept. of Northern Affairs and National Resources Northern Administration Branch (Yukon and N.W.T.) Dept. of Secretary of State Special Division Dominion Bureau of Statistics	LIQUOR CONTROL	**Nfld.**:—Dept. of Finance **P.E.I.**:—Temperance Commission **N.S.**:—Liquor Commission **Que.**:—Liquor Board **N.B., Ont., Alta., B.C.**:—Liquor Control Boards **Man.**:—Liquor Control Commission **Sask.**:—Liquor Board, Liquor Licensing Commission

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Agriculture Production and Marketing Branch Health of Animals Division Contagious Diseases Control, Meat Inspection, Animal Pathology Laboratory Livestock Division (production and marketing) Research Branch Animal Research Institute Canadian Broadcasting Corporation Farm and Fisheries Department Dept. of Trade and Commerce Agriculture and Fisheries Branch National Film Board Dominion Bureau of Statistics	LIVESTOCK	**Nfld.**:—Dept. of Mines, Agriculture, and Resources **P.E.I., N.B., Ont.**:—Depts. of Agriculture, Livestock Branches **N.S.**:—Dept. of Agriculture, Animal Husbandry Branch **Que.**:—Dept. of Agriculture, Animal Husbandry Branch Dept. of Industry and Commerce, Bureau of Statisitcs **Man.**:—Dept. of Agriculture and Conservation, Livestock Branch **Sask.**:—Dept. of Agriculture, Animal Industry Branch **Alta., B.C.**:—Provincial Bureaus of Statistics Depts. of Agriculture, Livestock Branches
Dept. of Forestry Economics Division Forest Products Research Branch Dept. of Trade and Commerce Commodities Branch National Film Board (films, filmstrips, photographs, in relation to departmental conservation and development programs) Dominion Bureau of Statistics	LUMBERING	**Nfld.**:—Dept. of Mines, Agriculture, and Resources **P.E.I.**:—Dept. of Industry and Natural Resources **N.S., Que., Ont., Alta.**:—Depts. of Lands and Forests **N.B.**:—Dept. of Lands and Mines **Man.**:—Dept. of Mines and Natural Resources, Forestry Branch **Sask.**:—Dept. of Natural Resources, Forestry Branch Dept. of Industry and Information Saskatchewan Timber Board **B.C.**:—Dept. of Lands and Forests Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dominion Bureau of Statistics Bank of Canada Industrial Development Bank Dept. of Defence Production (for defence items) Dept. of Secretary of State Companies Division Dept. of Trade and Commerce Commodities Branch National Research Council Canadian Patents and Development Limited (utilization of new scientific processes) National Film Board	MANUFACTURING *See also* "Crown Corporations"	**Nfld.**:—Dept. of Economic Development **P.E.I.**:—Dept. of Industry and Natural Resources **N.S.**:—Dept. of Trade and Industry **N.B.**:—Dept. of Industry and Development **Que.**:—Dept. of Industry and Commerce, Bureau of Statistics **Ont.**:—Dept. of Commerce and Development, Trade and Industry Branch Dept. of Economics, Economic Statistics Branch **Man.**:—Dept. of Industry and Commerce **Sask.**:—Economic Advisory and Planning Board Dept. of Industry and Information Government Finance Office **Alta.**:—Dept. of Industry and Development Alberta Bureau of Statistics **B.C.**:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Sources for Federal Data	**Subject**	**Sources for Provincial Data**
Dept. of Mines and Technical Surveys Surveys and Mapping Branch Geological Survey of Canada Geographical Branch Dominion Observatories Mineral Resources Division Dept. of Agriculture (soil survey and economic survey maps) Dept. of Fisheries Information and Educational Service (fisheries maps) Dept. of Transport (meteorological maps) National Research Council Division of Building Research Climatological Atlas of Canada Public Archives (maps relating to history and cartography) Dominion Bureau of Statistics (economic and census maps)	MAPS AND CHARTS	**Nfld.:**—Dept. of Mines, Agriculture, and Resources **P.E.I.:**—Dept. of Public Works and Highways **N.S.:**—Dept. of Mines Research Foundation **N.B.:**—Dept. of Lands and Mines **Que.:**—Dept. of Lands and Forests Dept. of Natural Resources Dept. of Industry and Commerce, Economic Cartography Service Dept. of Agriculture **Ont.:**—Dept. of Mines Dept. of Lands and Forests Dept. of Highways Dept. of Travel and Publicity **Man.:**—Dept. of Mines and Natural Resources, Surveys Branch **Sask.:**—Dept. of Natural Resources Dept. of Industry and Information **Alta., B.C.:**—Depts. of Lands and Forests
	MARRIAGES See "Vital Statistics"	
Dept. of Agriculture Administration Branch Economics Division Dominion Bureau of Statistics	MERCHANDISING	**Man.:**—Dept. of Industry and Commerce **Sask.:**—Dept. of Industry and Information **Alta.:**—Dept. of Industry and Development **B.C.:**—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Mines and Technical Surveys Mines Branch Mineral Resources Division Geological Survey of Canada Dept. of Trade and Commerce Commodities Branch Dominion Bureau of Statistics (for production data)	METALS (other than Iron and Steel)	**Nfld.:**—Dept. of Mines, Agriculture, and Resources **N.S., Ont.:**—Depts. of Mines **N.B.:**—Dept. of Lands and Mines **Que.:**—Dept. of Natural Resources **Man.:**—Dept. of Mines and Natural Resources, Mines Branch **Sask.:**—Dept. of Mineral Resources **Alta.:**—Dept. of Mines and Minerals **B.C.:**—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics Dept. of Mines and Petroleum Resources
	METEOROLOGY See "Weather"	
Dept. of Mines and Technical Surveys Geological Survey of Canada Mines Branch Mineral Resources Division Dept. of Northern Affairs and National Resources (Yukon and N.W.T.) Dominion Bureau of Statistics (for production data)	MINING AND MINERALS	**Nfld.:**—Dept. of Mines, Agriculture, and Resources **N.S., Ont.:**—Depts. of Mines **N.B.:**—Dept. of Lands and Mines **Que.:**—Dept. of Natural Resources **Man.:**—Dept. of Mines and Natural Resources, Mines Branch **Sask.:**—Dept. of Mineral Resources **Alta.:**—Dept. of Mines and Minerals **B.C.:**—Dept. of Mines and Petroleum Resources

Sources for Federal Data	Subject	Sources for Provincial Data
National Film Board (*Produces documentary films, newsreels and short subjects for theatrical, non-theatrical and television distribution; film-strips and photographs for informational, educational and archival purposes; other visual materials devoted to the interpretation of the Canadian scene to audiences both at home and abroad; and maintains a large film preview library for the benefit of government departments and other official bodies.*) Canadian Broadcasting Corporation (*Produces 16 mm. films for broadcasting over its own networks and stations. Some of these are available for export sales.*) National Gallery of Canada (library of films on art)	MOTION PICTURES	**Nfld., P.E.I., N.B.:**—Buy such films but do not produce them **N.S., Que., Alta., B.C.:**—Produce educational or informational films **Ont.:**—Films are available to the public from several departments **Man.:**—Dept. of Industry and Commerce **Sask.:**—Dept. of Industry and Information Dept. of Education, Visual Education Branch **Alta.:**—Dept. of Industry and Development, Photographic Branch **B.C.:**—Dept. of Recreation and Conservation (*All provinces have Motion Picture Censorship Boards. Details may be obtained by application to the province concerned: Depts. of Education and Travel, Provincial Censorship Boards and National Film Board Regional Offices.*)
Dominion Bureau of Statistics Public Finance and Transportation Division Dept. of Finance (municipal grants) Dept. of Northern Affairs and National Resources (Yukon and N.W.T.)	MUNICIPAL AFFAIRS	**Nfld.:**—Dept. of Municipal Affairs and Supply **P.E.I., N.S., N.B., Que., Ont., Man., Sask., Alta., B.C.:**—Depts. of Municipal Affairs
National Gallery of Canada (paintings, sculpture, etc.) Dept. of Northern Affairs and National Resources National Museum of Canada Canadian War Museum National Aviation Museum Laurier House, Ottawa (historical) National Historic Parks Museums Public Archives	MUSEUMS	**Nfld.:**—Dept. of Provincial Affairs **N.S.:**—Nova Scotia Museum of Fine Arts, Public Archives of Nova Scotia, Provincial Museum of Nova Scotia, Halifax **N.B.:**—New Brunswick Museum, Saint John **Que.:**—The Archives, Musée de la Province de Québec, Quebec Commercial and Industrial Museum of Montreal Dept. of Cultural Affairs **Ont.:**—Royal Ontario Museum, Art and Archaeology, Life Sciences and Earth Sciences Divisions Dept. of Travel and Publicity, Public Records and Archives **Man.:**—Manitoba Museum, Winnipeg **Sask.:**—Dept. of Natural Resources, Provincial Museum, Regina Western Development Museum, Saskatoon **Alta.:**—Provincial Archives, Legislative Building, Edmonton **B.C.:**—Provincial Museum of Natural History and Anthropology, Provincial Archives (including Helmcken House), Victoria Also provincial universities of Sask., Alta., and B.C.
Comptroller of the Treasury Dominion Bureau of Statistics	NATIONAL ACCOUNTS	
Dept. of Citizenship and Immigration Information Division	NATURALIZATION *See also* "Population"	

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Transport Marine Services (aids to marine navigation; secondary canals) Telecommunications Branch (radio aids to navigation) Information Services Canadian Maritime Commission Dept. of Mines and Technical Surveys Hydrographic Service Legal Surveys and Aeronautical Charts Division Dept. of Public Works (acquisition, construction and improvement of harbour and river works, incl. construction and operation of graving docks and marine engineering generally) Harbours and Rivers Engineering Branch Information Services National Harbours Board National Research Council Radio and Electrical Engineering Division (applications of radar to navigation) Division of Mechanical Engineering (model-testing basin and hydraulic models) St. Lawrence Seaway Authority (St. Lawrence-Great Lakes canals)	NAVIGATION	
Dept. of National Health and Welfare Nutrition Division Dept. of Agriculture Production and Marketing Branch Consumer Service Dept. of Fisheries Inspection and Consumer Service	NUTRITION	**Nfld., P.E.I., Que.:**—Depts. of Health **N.S.:**—Dept. of Public Health **N.B.:**—Dept. of Health and Social Services **Ont.:**—Dept. of Health Dept. of Agriculture, Home Economics Service **Man.:**—Dept. of Health and Public Welfare, Health Education Dept. of Agriculture and Conservation, Extension Service **Sask.:**—Dept. of Public Health, Nutrition Division **Alta.:**—Dept. of Agriculture, Nutritionist Dept. of Public Health **B.C.:**—Dept. of Health Services and Hospital Insurance
Dept. of Mines and Technical Surveys Director of Oceanographic Research Dept. of Fisheries Fisheries Research Board	OCEANOGRAPHY	**Que.:**—Dept. of Fisheries Marine Biological Station of Grande Rivière Fisheries Training School
Dept. of Mines and Technical Surveys Geological Survey of Canada Mineral Resources Division Mines Branch Dept. of Defence Production Dept. of Northern Affairs and National Resources (Yukon and N.W.T.) National Energy Board Northern Ontario Pipe Line Crown Corporation Dominion Bureau of Statistics	OIL AND NATURAL GAS	**Nfld.:**—Dept. of Mines, Agriculture, and Resources **P.E.I.:**—Dept. of Industry and Natural Resources **N.S.:**—Dept. of Mines **N.B.:**—Dept. of Lands and Mines **Ont.:**—Dept. of Energy Resources Dept. of Mines **Man.:**—Dept. of Mines and Natural Resources, Mines Branch **Sask.:**—Dept. of Mineral Resources Saskatchewan Power Corporation **Alta.:**—Dept. of Mines and Minerals Alberta Bureau of Statistics **B.C.:**—Dept. of Mines and Petroleum Resources

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources (Yukon and N.W.T.)	OLD AGE ASSISTANCE	**Nfld., N.S., B.C.:**—Old Age Assistance Boards **P.E.I.:**—Dept. of Welfare and Labour **N.B.:**—The Old Age and Blind Assistance Board **Que.:**—Dept. of Social Welfare, Social Allowance Commission **Ont.:**—Dept. of Public Welfare, Welfare Allowances Branch **Man.:**—The Old Age Assistance and Blind Persons' Allowances Board **Sask.:**—Dept. of Social Welfare and Rehabilitation, Director of Public Assistance **Alta.:**—Dept. of Public Welfare, Pensions Board
Dept. of National Health and Welfare	OLD AGE SECURITY PENSIONS	
Dept. of Northern Affairs and National Resources National Parks Branch National Capital Commission National Film Board	PARKS	**Nfld.:**—Dept. of Mines, Agriculture, and Resources **P.E.I.:** — Dept. of Industry and Natural Resources **N.S., Alta.:**—Depts. of Lands and Forests **N.B.:**—Dept. of Lands and Mines **Que.:**—Dept. of Game and Fisheries **Ont.:**—Dept. of Lands and Forests Dept. of Commerce and Development, Conservation Branch **Man.:**—Dept. of Mines and Natural Resources, Forestry Branch **Sask.:**—Dept. of Natural Resources **B.C.:**—Dept. of Recreation and Conservation
The Senate The House of Commons Library of Parliament Privy Council Office	PARLIAMENT	**Nfld.:**—Dept. of Provincial Affairs **P.E.I., N.B., Man., Sask., Alta., B.C.:**—Legislative Assemblies **N.S.:**—House of Assembly **Que.:**—Legislative Council Legislative Assembly **Ont.:**—Legislative Assembly Clerk of the Legislative Assembly
Dept. of Secretary of State Patent and Copyright Office Canadian Patents and Development Limited (licences available on patents from Government laboratories, etc.) National Library (handles all copyright books) Trade Marks Office	PATENTS, COPYRIGHTS AND TRADE MARKS	
National Film Board Canadian Broadcasting Corporation (Information Services makes photos available in connection with radio and TV programs) Dept. of Mines and Technical Surveys Editorial and Information Division Mineral Resources Division The National Air Photographic Library Dept. of Northern Affairs and National Resources Editorial and Information Division Public Archives (historical)	PHOTOGRAPHIC MATERIAL *See also* "Motion Pictures" *and* "Tourist Trade"	Photographs are available from many provincial government departments in all provinces.

Sources for Federal Data	**Subject**	**Sources for Provincial Data**
Dominion Bureau of Statistics (for all census population statistics) Dept. of Citizenship and Immigration Information Division (Indians and immigrants) Dept. of Northern Affairs and National Resources Northern Administration Branch (Eskimos) Public Archives (early census and settlement records)	POPULATION	**Nfld.:**—Dept. of Health **P.E.I.:**—Travel Bureau **N.S.:**—Dept. of Public Health, Vital Statistics Branch **N.B.:**—Dept. of Health and Social Services, Vital Statistics Branch **Que.:**—Dept. of Health, Vital Statistics Branch Dept. of Industry and Commerce, Bureau of Statistics **Ont.:**—Dept. of Economics, General Economics Branch **Man.:**—Dept. of Industry and Commerce Dept. of Municipal Affairs **Sask.:**—Dept. of Public Health, Vital Statistics Branch Legislative Library **Alta.:**—Dept. of Industry and Development, Provincial Statistician **B.C.:**—Dept. of Health Services and Hospital Insurance, Director of Vital Statistics Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Post Office Department Public Relations (general postal information) Administration Branch (postage rates, both domestic and foreign, etc.) Comptroller's Branch (budgets, purchasing, office services) Engineering and Development Branch (buildings, mechanical engineering) Financial Branch (information regarding money orders, savings bank, philatelic services, etc.) Operations Branch (information regarding postal service to the public and hours of service) Personnel Branch (personnel, training, employee services) Transportation Branch (air, land and railway mail services)	POST OFFICE	
Dept. of Agriculture Production and Marketing Branch Health of Animals Division, Contageous Diseases Control Meat Inspection, Animal Pathology Laboratory Poultry Division (production and marketing) Research Branch Animal Research Institute Canadian Broadcasting Corporation Farm and Fisheries Department Dept. of Trade and Commerce Agriculture and Fisheries Branch Dominion Bureau of Statistics	POULTRY	**Nfld.:**—Dept. of Mines, Agriculture, and Resources **P.E.I., N.S.:**—Depts. of Agriculture **N.B., Alta., B.C.:**—Depts. of Agriculture, Poultry Branches **Que.:**—Dept. of Agriculture, Poultry Division Dept. of Industry and Commerce, Bureau of Statistics **Ont.:**—Ontario Agricultural College (Guelph), Poultry Division **Man.:**—Dept. of Agriculture and Conservation, Extension Service **Sask.:**—Dept. of Agriculture, Animal Industry Branch
	POWER *See* "Electric Power"	
Dept. of Secretary of State Special Division	PRECEDENCE AND CEREMONIAL	**Nfld.:**—Dept. of Provincial Affairs **N.S., B.C.:**—Depts. of Provincial Secretary

Sources for Federal Data	Subject	Sources for Provincial Data
Dominion Bureau of Statistics Dept. of Agriculture Production and Marketing Branch Agriculture Stablization Board Markets Information Dept. of Fisheries Fisheries Prices Support Board	PRICES	**Ont.**:—Dept. of Economics, Economic Statistics Branch **Man.**:—Dept. of Industry and Commerce **Sask.**:—Economic Advisory and Planning Board **B.C.**:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Secretary of State Administration and Registration Division Public Archives (early records)	PUBLIC DOCUMENTS (Commissions of Appointment, Proclamations, Land Grants, etc.)	**Nfld.**:—Dept. of Provincial Affairs Dept. of Mines, Agriculture, and Resources **N.S., Que., Ont., Sask., B.C.**:—Depts. of Provincial Secretary
	PUBLIC HEALTH See "Health"	
Dominion Bureau of Statistics	PUBLIC UTILITIES *See also* "Electric Power"	**Nfld.**:—Public Utilities Board **P.E.I., B.C.**:—Public Utilities Commissions **N.S., N.B.**:—Boards of Commissioners of Public Utilities **Que.**:—Public Service Board Quebec Hydro-Electric Commission **Ont.**:—Dept. of Energy Resources The Hydro-Electric Power Commission of Ontario Ontario Telephone Service Commission Ontario Water Resources Commission Ontario Municipal Board **Man.**:—Dept. of Public Utilities **Sask.**:—Government Finance Office Saskatchewan Government Telephones Saskatchewan Power Corporation **Alta.**:—Board of Public Utilities Commissioners Natural Gas Utilities Board
	PUBLIC WELFARE See "Welfare"	
Dept. of Public Works Information Services Dept. of Labour Industrial Relations Branch (fair wages) Dept. of Transport Marine and Air Services St. Lawrence Seaway Authority	PUBLIC WORKS	**All Provinces.**:—Depts. of Public Works *Additional*:—**Ont.**:—The Hydro-Electric Power Commission of Ontario Ontario Water Resources Commission

Sources for Federal Data	**Subject**	**Sources for Provincial Data**
Canadian Broadcasting Corporation (national service includes AM, FM, and shortwave radio stations reaching 98 p.c. of Canadians) Board of Broadcast Governors (regulations for operation of radio and TV stations and networks both public and private) Dept. of Transport Telecommunications Branch (all matters affecting licences and facilities) Canadian Overseas Telecommunication Corporation National Research Council Radio and Electrical Engineering Division (radio science and its application to industry)	RADIO	**Ont.:**—Ontario Provincial Police, Radio Communications Branch Ryerson Institute of Technology, Toronto, Radio Station CJRT—FM **Sask.:**—Dept. of Natural Resources, Communications Division **Alta.:**—Radio CKUA, Edmonton, operated by Dept. of Telephones
	RAILWAYS See "Transportation"	
Dept. of Northern Affairs and National Resources National Parks Branch Canadian Government Travel Bureau Northern Administration Branch (for Y.T. and N.W.T.) Dept. of National Health and Welfare National Gallery of Canada (federal) National Film Board	RECREATION *See also* "Health"	**P.E.I., N.S., N.B., Que., Ont.:**—Depts. of Education **Man.:**—Dept. of Industry and Commerce, Travel and Publicity Branch **Sask.:**—Dept. of Industry and Information, Travel Bureau Dept. of Education **Alta.:**—Dept. of Provincial Secretary, Community Recreation Bureau **B.C.:**—Dept. of Recreation and Conservation
Dept. of Veterans Affairs Dept. of Citizenship and Immigration Information Division (Indians) Dept. of Labour Civilian Rehabilitation Branch Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources Northern Administration Branch (for Eskimos) National Film Board	REHABILITATION (of persons)	**Nfld.:**—Dept. of Health, Provincial Co-ordinator of Rehabilitation **P.E.I.:**—Dept. of Welfare and Labour **N.S.:**—Dept. of Public Health, Provincial Rehabilitation Co-ordinator **N.B.:**—Dept. of Health and Social Services, Provincial Co-ordinator of Rehabilitation **Que.:**—Dept. of Social Welfare Dept. of Youth Dept. of Labour **Ont.:**—Workmen's Compensation Board Dept of Health, Alcoholism Research Foundation Dept. of Reform Institutions **Man.:**—Dept. of Health and Public Welfare, Provincial Co-ordinator of Rehabilitation Services **Sask.:**—Dept. of Social Welfare and Rehabilitation, Provincial Co-ordinator of Rehabilitation of Disabled Persons **Alta.:**—Dept. of Public Welfare **B.C.:**—Dept. of Health Services and Hospital Insurance, Rehabilitation Co-ordinator
Canada Council (humanities and social sciences)	RESEARCH *See also* "Economic and Social Research" *and* "Scientific Research"	

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Northern Affairs and National Resources Water Resources Branch (for Yukon and N.W.T. and federal interests in the provinces) Northern Canada Power Commission	RESOURCE DEVELOPMENT	**Nfld.**:—Dept. of Economic Development **P.E.I.**:—Dept. of Industry and Natural Resources **N.S.**:—Dept. of Municipal Affairs Dept. of Trade and Industry **N.B.**:—Dept. of Industry and Development **Que.**:—Depts. of Lands and Forests, Labour, Roads, Social Welfare, Youth, and Natural Resources Dept. of Industry and Commerce, Industrial Commission Branch **Ont.**:—Dept. of Commerce and Development Dept. of Economics, Economic Statistics Branch Ontario–St. Lawrence Development Commission Dept. of Municipal Affairs, Community Planning Branch Ontario Northland Transportation Commission, North Bay **Man.**:—Dept. of Industry and Commerce **Sask.**:—Dept. of Industry and Information, Industrial Development Office **Alta.**:—Dept. of Industry and Development **B.C.**:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
National Research Council Laboratory Divisions (for investigations in applied biology, building research, pure and applied chemistry, mechanical engineering, aeronautical research, pure and applied physics, radio and electrical engineering) Regional Laboratories at Saskatoon, Sask., and Halifax, N.S. Medical Research Council (fellowships, associateships and grants-in-aid for graduate research in the universities) Canadian Patents and Development Limited (licences available on patents derived from government research, etc.) Dept. of Agriculture Research Branch (continuous broad program of basic and applied research on all aspects of agriculture) Dept. of Forestry Forest Research Branch Forest Products Research Branch Forest Entomology and Pathology Branch Economics Division Dept. of Mines and Technical Surveys Geological Survey of Canada Mines Branch Dominion Observatories Geographical Branch Director of Oceanographic Research Dept. of National Defence Defence Research Board Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources National Museum of Canada National Parks Branch (wildlife) Northern Research Co-ordination Centre Dept. of Transport (aviation, radio, meteorology, navigation) Dept. of Veterans Affairs Treatment Services Branch (medical research) Fisheries Research Board of Canada	SCIENTIFIC RESEARCH	**Nfld.**:—Dept. of Economic Development **P.E.I.**:—Dept. of Industry and Natural Resources **N.S.**:—Nova Scotia Research Foundation **N.B.**:—Dept. of Industry and Development, Research and Development Division **Que.**:—Dept. of Industry and Commerce, Economic and Scientific Research Bureau **Ont.**:—Ontario Research Foundation Dept. of Agriculture Dept. of Lands and Forests Alcoholism Research Foundation **Man.**:—Various Depts., such as Health and Welfare, Mines and Natural Resources, Agriculture and Conservation, Industry and Commerce **Sask.**: — Saskatchewan Research Council **Alta.**:—Alberta Research Council **B.C.**:—Dept. of Industrial Development, Trade, and Commerce, B.C. Research Council

Sources for Federal Data	**Subject**	**Sources for Provincial Data**
	SENATE See "Parliament"	
	SMALL LOANS AND MONEY-LENDERS See "Banking"	
	SOCIAL SECURITY See "Family Allowances" "Blindness Allowances" "Old Age Assistance" "Old Age Security" "Disabled Persons Allowances" "Workmen's Compensation" "Labour" "Unemployment" "Veterans Affairs" "Economic and Social Research"	
	SOCIAL WELFARE See "Welfare"	

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Trade and Commerce Standards Branch (for inquiries on electricity and gas inspection, weights and measures, precious metals marking, commodity standards and national trade mark matters) Canadian Government Specifications Board (specifications for purchasing) Canadian Standards Association Central Mortgage and Housing Corporation (apartment building standards; NHA financed) Dept. of Agriculture (for inquiries on standards for meat, canned food, fruit, honey, maple products, vegetables, dairy products, poultry, etc.) Dept. of Fisheries (standards of fish products) Dept. of National Health and Welfare (for standards and methods of control of quality or potency of food and drugs) Dept. of Transport (standards in radio frequencies, standards in steamship inspection) National Research Council Applied Physics Division (fundamental physical and electrical standards) Division of Building Research, Specifications Section	STANDARDS AND SPECIFICATIONS	
	STEAMSHIPS See "Transportation"	
	SUCCESSION DUTIES See "Taxation"	
Dept. of National Revenue Taxation Division (income tax and estate tax statistics and information) Customs and Excise Division (customs duty, excise duty, excise tax and sales tax) Dept. of Finance (Budget papers reviewing taxation policy, changes in rates, revenue forecasts)	TAXATION	**Nfld., Que.:**—Depts. of Finance **P.E.I.:**—Provincial Treasurer **N.S.:**—Dept. of Provincial Treasurer **N.B.:**—Dept. of Provincial Secretary-Treasurer **Ont.:**—Treasury Dept. **Man., Sask.:**—Provincial Treasury Depts. **Alta.:**—Provincial Treasurer's Dept. Dept. of Provincial Secretary **B.C.:**—Dept. of Finance, Surveyor of Taxes
	TELEGRAPHS AND TELEPHONES See "Communications"	
Board of Broadcast Governors Canadian Broadcasting Corporation (television networks serve 88 p.c. of Canadians) Dept. of Transport Telecommunications Branch National Research Council National Film Board	TELEVISION See *also* "Radio"	

Sources for Federal Data	**Subject**	**Sources for Provincial Data**
Dept. of Mines and Technical Surveys Topographical Survey Division National Research Council Applied Physics Division (photogrammetric research)	TOPOGRAPHY	**Nfld.:**—Dept. of Mines, Agriculture, and Resources **N.S.:**—Dept. of Mines Nova Scotia Research Foundation **N.B.:**—Dept. of Lands and Mines **Que.:**—Dept. of Lands and Forests Dept. of Industry and Commerce, Cartography Service Dept. of Natural Resources **Ont.:**—Dept. of Lands and Forests, Surveys Branch **Man.:**—Dept. of Mines and Natural Resources, Surveys Branch **Sask.:**—Dept. of Natural Resources **Alta., B.C.:**—Depts. of Lands and Forests
Dept. of Northern Affairs and National Resources Canadian Government Travel Bureau National Parks Branch Dept. of Trade and Commerce Canadian Government Exhibition Commission (displays) National Gallery of Canada (federal) National Film Board Dominion Bureau of Statistics	TOURIST TRADE	**Nfld.:**—Tourist Development Board **P.E.I.:**—Dept. of Provincial Secretary, Tourist and Information Branch **N.S.:**—Dept. of Trade and Industry, Travel Bureau **N.B.:**—New Brunswick Travel Bureau **Que.:**—Provincial Tourist Bureau **Ont.:**—Dept. of Travel and Publicity **Man.:**—Dept. of Industry and Commerce **Sask.:**—Dept. of Industry and Information, Travel Bureau **Alta.:**—Dept. of Industry and Development, Alberta Travel Bureau **B.C.:**—Dept. of Recreation and Conservation, Travel Branch
Dept. of Trade and Commerce Agriculture and Fisheries Branch Canadian Government Exhibition Commission Commodities Branch (for exports, imports, transportation, etc.) Domestic Commerce Service Export Credits Insurance Corporation International Trade Relations Branch Standards Branch (weights and measures) Trade Commissioner Service Trade Publicity Branch Dept. of Secretary of State Companies Division National Film Board (films, filmstrips, photographs, for exhibition publicity purposes) Dominion Bureau of Statistics	TRADE	For incorporation of companies under provincial law, address Provincial Secretaries except B.C., where Attorney General's Department is the authority. **Nfld.:**—Dept. of Economic Development **P.E.I.:**—Dept. of Industry and Natural Resources **N.S.:**—Dept. of Trade and Industry **N.B., Alta.:**—Depts. of Industry and Development **Que., Man.:**—Depts. of Industry and Commerce **Ont.:**—Dept. of Economics, Economic Statistics Branch Dept. of Commerce and Development, Trade and Industry Branch **Sask.:**—Dept. of Industry and Information, Trade and Business Information Services **B.C.:**—Dept. of Industrial Development, Trade, and Commerce
Dept. of the Secretary of State Bureau for Translations National Research Council National Science Library (information *re* location of completed scientific translations in Canada, other countries of the Commonwealth, and the United States)	TRANSLATIONS	**Que.:**—Legislative Assembly Bureau for Translations

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Transport Information Services Canadian Maritime Commission National Harbours Board Trans-Canada Air Lines Air Transport Board (regulation of commercial air services) Board of Transport Commissioners (regulations *re* construction and operation of railways; construction and protection of highway crossings; rates of railways, express companies and certain inland water carriers; rates with respect to communications, international bridges and tunnels; issuing of licences to certain inland carriers) Dept. of Forestry (Forest Access Roads Program) Dept. of National Defence Directorate of Public Relations (Army) (for maintenance of Alaska Highway) Dept. of National Health and Welfare Civil Aviation Medicine Division Dept. of Northern Affairs and National Resources ("Roads to Resources" and "Territorial Development Roads" programs) National Parks Branch (for highways in National Parks) Dept. of Public Works (Trans-Canada Highway, roads and bridges in the North and in National Parks and international and interprovincial bridges) Development Engineering Branch Information Services Dept. of Trade and Commerce Transportation and Trade Services Division Northern Transportation Company Limited (Crown) St. Lawrence Seaway Authority National Film Board Dominion Bureau of Statistics	TRANSPORTATION	**Nfld., N.S.:**—Depts. of Highways **P.E.I.:**—Dept. of Industry and Natural Resources **N.B.:**—Dept. of Public Works, Highways Branch **Que.:**—Dept. of Transportation and Communications **Ont.:**—Dept. of Transport Dept. of Highways Dept. of Economics, Economic Statistics Branch Ontario Northland Transportation Commission, North Bay **Man.:**—Dept. of Public Works, Highways Branch Manitoba Transportation Commission Dept. of Public Utilities Dept. of Industry and Commerce **Sask.:**—Dept. of Highways and Transportation Saskatchewan Transportation Company **Alta.:**—Dept. of Railways and Telephones Dept. of Highways, Highway Traffic Board **B.C.:**—Dept. of Commercial Transport Public Utility Commission Dept. of Highways Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Northern Affairs and National Resources Northern Administration Branch (Yukon and N.W.T.) National Parks Branch Dept. of Citizenship and Immigration Information Division (Indians) Dominion Bureau of Statistics	TRAPPING *See also* "Fur Farming"	**Nfld.:**—Dept. of Mines, Agriculture, and Resources **P.E.I.:**—Dept. of Industry and Natural Resources **N.S., Ont., Alta.:**—Depts. of Lands and Forests **N.B.:**—Dept. of Lands and Mines **Que.:**—Dept. of Game and Fisheries **Man.:**—Dept. of Mines and Natural Resources, Game and Fisheries Branch **Sask.:**—Dept. of Natural Resources, Fur Marketing Service **B.C.:**—Dept. of Recreation and Conservation
Dept. of Labour Economics and Research Branch Unemployment Insurance Commission Dominion Bureau of Statistics	UNEMPLOYMENT	**Nfld., N.S., Que., Sask., Alta.:**—Depts. of Labour **Ont.:**—Dept. of Economics, General Economics Branch Dept. of Public Welfare **B.C.:**—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics Dept. of Labour

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources Northern Administration Branch (Yukon and N.W.T.) National Parks Branch (winter works program)	UNEMPLOYMENT ASSISTANCE	**Nfld., P.E.I., N.S., Man., Sask.:**—Depts. of Public Welfare **N.B.:**—Dept. of Youth and Welfare **Que., B.C.:**—Dept. of Social Welfare **Ont.:**—Dept. of Public Welfare, Director of General Welfare Assistance
Central Mortgage and Housing Corporation	URBAN REDEVELOPMENT	**Ont.:**—Dept. of Commerce and Development, Housing Branch **Man.:**—Dept. of Industry and Commerce, Town Planning Section
Dept. of Veterans Affairs (general information, rehabilitation, welfare—War Veterans Allowance applications, training, treatment, land settlement, gratuities, re-establishment credit, education of children of war dead, insurance, business and professional loans, records of service, war graves and medals) Canadian Pension Commission (the Pension Act and Civilian War Pensions and Allowances Act) Dept. of Citizenship and Immigration Indian Affairs Branch (for Indian veterans) Dept. of Finance (veterans business and professional loans) Dept. of Labour (reinstatement, vocational training) Unemployment Insurance Commission (unemployment insurance benefits) War Veterans Allowance Board (the War Veterans Allowance Act)	VETERANS AFFAIRS	**P.E.I.:**—Provincial Secretary **N.S.:**—Dept. of Public Welfare **N.B.:**—Dept. of Youth and Welfare **Que.:**—Dept. of Social Welfare **Ont.:**—Dept. of Public Welfare, Soldiers Aid Commission **Sask.:**—Dept. of Social Welfare, Rehabilitation Division **Alta.:**—Veterans Welfare Advisory Commission **B.C.:**—Dept. of Provincial Secretary
Dominion Bureau of Statistics Dept. of Citizenship and Immigration Information Division (Indians and immigrants) Dept. of Northern Affairs and National Resources Northern Administration Branch (Yukon and N.W.T.) Public Archives (early census records)	VITAL STATISTICS	**Nfld., Que.:**—Depts. of Health **P.E.I.:**—Dept. of Health, Director of Vital Statistics **N.S., Alta.:**—Depts. of Public Health, Registrars General **N.B.:**—Dept. of Health and Social Service **Ont.:**—Dept. of Provincial Secretary, Registrar-General's Branch **Man.:**—Dept. of Health and Public Welfare, Vital Statistics Division **Sask.:**—Dept. of Public Health, Vital Statistics Branch **B.C.:**—Dept. of Health Services and Hospital Insurance, Vital Statistics Division
Dept. of Labour Industrial Relations Branch (fair wages) Economics and Research Branch Legislation Branch Dominion Bureau of Statistics	WAGES (including Working Conditions)	**All Provinces:**—Depts. of Labour *Additional:*—**Ont.:**—Dept. of Economics, General Economics Branch **Alta.:**—Dept. of Industry and Development **B.C.:**—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Northern Affairs and National Resources Water Resources Branch (for Yukon and N.W.T. and federal interests in provinces) Dept. of Agriculture Prairie Farm Rehabilitation Administration Dept. of Fisheries (where fishery resources are affected) Dept. of Mines and Technical Surveys Mines Branch (industrial waters) Geological Survey of Canada (ground-water studies) National Film Board	WATER RESOURCES	**Nfld.**:—Dept. of Mines, Agriculture, and Resources **N.S.**:—Nova Scotia Power Commission **N.B.**:—Dept. of Lands and Mines **Que.**:—Dept. of Natural Resources **Ont.**:—Ontario Water Resources Commission Dept. of Commerce and Development Dept. of Lands and Forests **Man.**:—Dept. of Agriculture and Conservation, Water Control Branch **Sask., Alta.**:—Depts. of Agriculture **B.C.**:—Dept. of Lands and Forests
Dept of Transport Meteorological Branch, Toronto National Research Council Division of Building Research Climatological Atlas of Canada	WEATHER	
Dept. of National Health and Welfare Dept. of Citizenship and Immigration Information Division (Indians) Dept. of Labour Government Annuities Branch Dept. of Northern Affairs and National Resources Northern Administration Branch (for Eskimos) National Advisory Committee on the Rehabilitation of Disabled Persons Northwest Territories Council, Ottawa Unemployment Insurance Commission Yukon Territorial Council, Whitehorse National Film Board Dominion Bureau of Statistics	WELFARE For Welfare of Veterans see "Veterans Affairs"	**Nfld., N.S., Ont., Alta.**:—Depts. of Public Welfare **P.E.I.**:—Dept. of Welfare and Labour **N.B.**:—Dept. of Health and Social Services **Que.**:—Dept. of Social Welfare Dept. of Youth **Man.**:—Dept. of Health and Public Welfare **Sask.**:—Dept. of Social Welfare and Rehabilitation **B.C.**:—Dept. of Social Welfare
Dept. of Northern Affairs and National Resources National Parks Branch Canadian Wildlife Service National Museum of Canada Commissioner of Yukon Territory, Whitehorse Dept. of Fisheries Information and Educational Service National Film Board	WILDLIFE	**Nfld.**:—Dept. of Mines, Agriculture, and Resources **P.E.I.**:—Dept. of Industry and Natural Resources **N.S., Ont., Alta.**:—Depts. of Lands and Forests **N.B.**:—Dept. of Lands and Mines **Que.**:—Dept. of Game and Fisheries **Man.**:—Dept. of Mines and Natural Resources **Sask.**:—Dept. of Natural Resources, Wildlife Branch **B.C.**:—Dept. of Recreation and Conservation
Dept. of Labour Government Employees' Compensation Branch Merchant Seamen Compensation Board Dept. of Northern Affairs and National Resources (Yukon and N.W.T.)	WORKMEN'S COMPENSATION	Provincial Workmen's Compensation Boards at:— **Nfld.**:—St. John's **P.E.I.**:—Charlottetown **N.S.**:—Halifax; **N.B.**:—Saint John **Ont.**:—Toronto; **Man.**:—Winnipeg **Sask.**:—Regina; **Alta.**:—Edmonton **B.C.**:—Vancouver **Que.**:—Workmen's Compensation Commission

PART II.—SPECIAL MATERIAL PUBLISHED IN FORMER EDITIONS OF THE CANADA YEAR BOOK

It is not possible to include in any single edition of the Year Book all articles and descriptive text of previous editions. Therefore the following list has been compiled as an index to such miscellaneous material and special articles as are not repeated in the present edition. This list links up the 1961 Year Book with its predecessors in respect of matters that have not been subject to wide change. Those Sections of Chapters, such as "Population", which are automatically revived when later census material is made available and to which adequate references are made in the text, are not listed unless they are in the nature of special contributions. The latest published article on each subject is shown, except when an earlier article includes material not repeated in the later one. When an article covers more than one subject it is listed under each appropriate heading.

The articles marked with an asterisk(*) are available in reprint form from the Information Services Division, Dominion Bureau of Statistics.

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Prairie Farm Rehabilitation Program	William Dickson	1938	223–230
Historical Background of Canadian Agriculture	G. S. H. Barton	1939	187–190
The War and Canadian Agriculture	—	1945	188–191
Agricultural Marketing Legislation, 1939	—	1940	181–185
The 1946-47 National Agricultural Program and Policy	—	1947	324–328
The Major Soil Zones and Regions of Canada	P. C. Stobbe	1951	352–356
Agricultural Irrigation and Land Conservation	—	1951	367–379
Major Developments in Organization and Policy of the Federal Department of Agriculture	—	1954	366–370
*Marketing of Farm-Produced Foods	—	1956	917–922
*Postwar Agriculture	—	1957–58	392–396
The Revolution in Canadian Agriculture	H. H. Hannam	1960	434–439
The Board of Grain Commissioners	W. J. MacLeod	1960	957–958
The Canadian Wheat Board and its Role in Grain Marketing	C. B. Davidson	1960	958–960
Art, Literature and the Press—			
Art in Canada	—	1924	886–888
The Development of the Fine Arts in Canada	Newton McTavish	1931	995–1009
A Bibliography of Canadian History	Gustave Lanctot	1939	36–40
*The Democratic Functioning of the Press	W. A. Buchanan	1945	744–748
Royal Commission on National Development in the Arts, Letters and Sciences	—	1951	315–316
Report of the Royal Commission on National Development in the Arts, Letters and Sciences	—	1952–53	342–345
*A History of Canadian Journalism, 1752-(circa) 1900	W. H. Kesterton	1957–58	920–934
*A History of Canadian Journalism (circa) 1900-1958	W. H. Kesterton	1959	883–902
(reprint includes both articles)			
Banking and Finance—			
Banking Legislation	—	1931	891–896
The Bank of Canada and its Relation to the Financial System	—	1937	881–885

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Historical Sketch of Currency and Banking..	—	1938	900–906
The Royal Canadian Mint..................	H. E. Ewart...............	1940	888–892
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Wartime Control under the Foreign Exchange Control Board..........................	R. H. Tarr...............	1941 1942	833–835 830–833
*The Underwriting and Distribution of Investments; their Influence on the Capital Market..................................	Investment Dealers Association of Canada...........	1950	1088–1095
Post-War Financial Policy...................	—	1954	1061–1064
The Canada Conversion Loan..............	E. C. Gould...............	1959	1130–1131
Citizenship—			
Early Naturalization Procedure and Events Leading up to the Canadian Citizenship Act....................................	—	1951	153–155
Climate and Meteorology—			
Factors which Control Canadian Weather...	Sir Frederick Stupart....	1925	36–40
Temperature and Precipitation in Northern Canada.................................	A. J. Connor...............	1930	41–56
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*Meteorology Related to the Science of Aviation......................................	J. Patterson...............	1933–44	24–29
*The Climate of Canada (textual material appears in the 1959 Year Book and the tabular data in the 1960 edition but the reprint includes both textual and tabular data)...................................	C. C. Boughner and M. K. Thomas	1959 1960	23–51 33–77
Communications—			
*The Democratic Functioning of the Press	W. A. Buchanan..........	1945	744–748
*History and Development of the Canadian Broadcasting Corporation.................	Augustin Frigon..........	1947	737–740
The Telecommunications Branch of the Department of Transport.................	—	1957–58	894–896
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British Columbia........................	John Hosie................	1922–23	113–115
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The Government of Canada's Arctic Territory....................................	R. A. Gibson..............	1938	92–93
The Evolution of the Constitution of Canada down to Confederation..................	S. A. Cudmore and E. H. Coleman..........	1942	34–40
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Canada's Present Status in the British Commonwealth of Nations...................	W. P. J. O'Meara..........	1943–44	41–47
Canada's Growth in External Status.........	F. H. Soward.............	1945	74–79
*Canada's Part in the Relief and Rehabilitation of the Occupied Territories..........	—	1945	79–85
*Constitution and Government...............	—	1948–49	78–122
The Constitutional Development of Newfoundland prior to Union with Canada, 1949....................................	—	1950	85–92

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*The Organization of the Government of Canada	—	1950	93–133
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Financial Administration of the Government of Canada	—	1956	101–107
*The Privy Council Office and Cabinet Secretariat in Relation to the Development of Cabinet Government	W. E. D. Halliday	1956	62–70
Construction—			
The Effects of Government Wartime Expenditures on the Construction Industry	H. Carl Goldenberg	1941	366–368
*The Changing Pattern of Canada's Housing	—	1957–58	732–734
Crime and Delinquency—			
A Historical Sketch of Criminal Law and Procedure	R. E. Watts	1932	897–899
*The Influence of the Royal Canadian Mounted Police in the Building of Canada	S. T. Wood	1950	317–331
The Philosophy of the Royal Canadian Mounted Police	—	1957–58	332–334
Education—			
Recent Advances in the Field of Education in Canada	J. E. Robbins	1941	876–883
Canada and UNESCO	J. E. Robbins	1947	313–315
Royal Commission on National Development in the Arts, Letters and Sciences	—	1951	315–316
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Fauna and Flora—			
Faunas of Canada	P. A. Taverner	1922–23	32–36
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The Canadian Government's Reindeer Experiment	R. A. Gibson	1943–44	17–23
*Migratory Bird Protection in Canada	—	1951	38–43
*The Barren-Ground Caribou	—	1954	33–36
Migratory Bird Legislation	—	1955	41–45
*The Musk-ox	—	1957–58	28–30
Fisheries—			
The Fish Canning and Curing Industry	D. B. Finn	1941	225–226
The Effects of the War on Canadian Fisheries	D. B. Finn	1943–44	277–279
Game Fish in Canada's National Parks	V. E. F. Solman	1952–53	34–36
*Canada's Commercial Fisheries Resources	F. H. Wooding	1955	578–590
*Scientific Management of Game Fish in Canada's National Parks	—	1956	35–39
Groundfish Species in the Canadian Fisheries	T. H. Turner	1957–58	591–595
The Fisheries Research Board	J. L. Kask	1959	584–588
Canada's Commercial Fishery Resources and Their Conservation	—	1960	625–630
Forestry—			
A Sketch of the Canadian Lumber Trade	A. R. M. Lower	1925	318–323
Physiography, Geology and Climate as Affecting the Forests	—	1934–35	311,313

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The Influence of the War on the Pulp and Paper Industry	—	1943–44	264–265
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*Noxious Forest Insects and Their Control	J. J. de Gryse	1947	389–400
Canada's Forest Economy	—	1951	425–437
*The Pulp and Paper Industry in Canada	—	1952–53	467–475
Administration of Crown Forests in Canada	—	1954	458–465
*The Forest Products Laboratories of Canada	J. H. Jenkins	1955	455–461
*The Federal-Provincial Forestry Agreements	H. W. Beall	1956	459–466
The Pulp and Paper Research Institute of Canada	Reille Thomson	1957–58	489–491
Fur Trade—			
Fur Farming	W. M. Ritchie	1942	254–259
The Development of Marshlands in Relation to Fur Production and the Rehabilitation of Fur-Bearers	D. J. Allan	1943–44	267–269
Geology—			
Geology in Relation to Agriculture	Wyatt Malcolm	1921	68–72
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The Geological Survey of Canada	J. M. Harrison	1960	13–19
Harbours—			
National Harbours Board	R. O. Campney	1940	679–681
Health and Welfare—			
Development of Public Health, Welfare and Social Security in Canada	G. F. Davidson	1952–53	224–229
The National Health Grant Program	—	1954	215–223
*Mental Health and Tuberculosis	B. R. Blishen and C. A. Roberts	1956	248–257
Poliomyelitis Vaccine	—	1956	258–260
Health in Canada	—	1957–58	232–235
Hospital Services and Hospital Insurance in Canada	—	1960	281–290
Insurance—			
The Growth and Development of Life Insurance in Canada	A. D. Watson	1933	937–944
Fire and Casualty Insurance	G. D. Finlayson	1942	842–846
*Insurance in Canada during the Depression and War Periods	G. D. Finlayson	1947	1064–1074
Labour—			
Legislation Respecting Combinations in Restraint of Trade	F. A. McGregor	1927–28	765–770
The National Employment Commission	—	1938	778–779
Labour Legislation in Canada	Miss M. Mackintosh	1938	787–796
*Seasonal Unemployment in Canada	—	1956	758–766
*History of the Labour Movement in Canada	Eugene Forsey	1957–58	795–806
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The Influence of the Present War on Manufacturing	—	1943–44	354–362

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Changes in Canadian Manufacturing Production from Peace to War, 1939–44	—	1945	364–381
The Automobile Industry in Canada	H. McLeod	1947	521–525
*The Chemical Industries in Canada	H. McLeod	1948–49	532–550
*The Pulp and Paper Industry in Canada	—	1952–53	467–475
*Steel in Canada	E. Westbrook and F. M. Pelletier	1959	618–625
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Mining—A Historical Sketch	—	1939	309–310
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Government Control of Non-Ferrous Metals and Fuels in Wartime	—	1942	279–282
The Outlook for the Mineral Industry in Relation to the Economic Development of Canada	G. H. Murray	1946	302–314
The Coal Deposits and Coal Resources of Canada	B. R. MacKay	1946	337–347
The Iron-Ore Resources of the Quebec-Labrador Region	W. M. Goodwin	1950	505–512
Titanium—The Basis of a New Industry in Quebec	W. M. Goodwin	1950	512–513
Post-War Expansion in Canada's Mineral Industry	H. G. Murray and Mrs. M. J. Giroux	1952–53	476–495
*Canadian Crude Petroleum Situation	G. S. Hume	1952–53 1954	524–527 540–544
History of Pipeline Construction in Canada	G. S. Hume	1954	861–869
National Defence—			
The Royal Canadian Naval College	—	1946	1081–1082
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The British Commonwealth Air Training Plan—A Summary of the RCAF's Major Role in the War of 1939–45	—	1946	1090–1099
Northwest Territories—			
The Canadian Government's Reindeer Experiment	R. A. Gibson	1943–44	17–23
*The Northland—Canada's Challenge	—	1955	22–32
Physiography and Related Sciences—			
Physical Geography of the Canadian Eastern Arctic	R. A. Gibson	1945	12–19
The Relation of Hydrography to Navigation and the War Record of the Hydrographic and Map Service	F. C. G. Smith	1946	14–18
Hydrographical Features	F. C. G. Smith	1947	3–12
*Physical Geography of the Canadian Western Arctic	R. A. Gibson	1948–49	9–18
*The Contribution to Science made by the Dominion Astrophysical Observatory	J. A. Pearce	1948–49	63–71
*The Northland—Canada's Challenge	—	1955	22–32
*Geophysics in Canada	C. S. Beals and J. T. Wilson	1956	43–49
*Mapping and Charting in Canada	—	1956	17–22
The National Capital Plan	—	1956	30–34
*Astronomy in Canada	C. S. Beals J. F. Heard A. E. Covington	1956	49–55
The Atlas of Canada Project	N. L. Nicholson	1959	12–13
The International Geophysical Year	D. C. Rose	1959	54–57
The Geological Survey of Canada	J. M. Harrison	1960	13–19

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Nuptiality and Fertility in Canada	Enid Charles	1942	100–115
Areas and Populations of Countries of the British Empire, 1941	—	1943–44	141–142
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*Developments in Canadian Immigration	—	1957–58	154–176
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Power Resources—			
The Water-Power Resources of Canada and Their Utilization	J. T. Johnston	1940	353–364
*Conversion Program to 60-cycle Power in Southern Ontario	—	1951	540–548
*The St. Lawrence Power Project	—	1955	549–553
Research—			
The National Research Council	F. E. Lathe	1932	867–870
*Scientific and Industrial Research in Canada	—	1954	341–356
*The Contribution to Science made by the Dominion Astrophysical Observatory	J. A. Pearce	1948–49	63–71
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*The International Geophysical Year	D. C. Rose	1957–58	35–38
The Fisheries Research Board	J. L. Kask	1959	584–588
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Standard Time and Time Zones in Canada	C. C. Smith	1934–35	50–53
Times of Sunrise and Sunset	—	1938	66–68
Trade, Domestic—			
Wartime Controls Affecting Distribution and Trade, 1945-46	—	1946	574–578
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*Marketing Farm-Produced Foods	—	1956	917–922
The Board of Grain Commissioners	W. J. MacLeod	1960	957–958
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Transportation—			
The Development of Aviation in Canada	J. A. Wilson	1938	710–712
Pre-War Civil Aviation and the Defence Program	J. A. Wilson	1941	608–612
Wartime Control of Transportation	—	1943–44	567–575
The Wartime Role of the Steam Railways of Canada	C. P. Edwards	1945	648–651
Canada's Northern Airfields	A. D. McLean	1945	705–712
*International Civil Aviation Organization and Canada's Participation Therein	C. S. Booth	1952–53	820–827
Canals of the St. Lawrence Waterway	—	1954	830–833
*History of the Canadian National Railways	—	1955	840–851
*The St. Lawrence Seaway	—	1955	885–888
Traffic on the Great Lakes - St. Lawrence Seaway	—	1956	821–829
*The St. Lawrence Seaway in Operation	S. Judek	1960	851–860

PART III.—REGISTER OF OFFICIAL APPOINTMENTS

The following list of official appointments continues up to Aug. 31, 1961, the list published in the 1960 Year Book at pp. 1243-1251.

Governor General's Staff.—1960. *Dec. 14*, Surgeon Commander L. E. Prowse, RCN (R): to be Honorary Aide-de-Camp. **1961.** *Jan. 7*, 2486 Group Captain A. F. Banville, C.D.: to be Honorary Aide-de-Camp, effective Sept. 20, 1960. *Apr. 1*, The following officers to be Honorary Aides-de-Camp, effective the dates shown after their names: TF7087 Acting Colonel C. D. Arnold, C.D., Feb. 17, 1961; TB95526 Lieutenant-Colonel R. M. Horsey, D.S.O., C.D., Mar. 13, 1961; TB22160 Acting Lieutenant-Colonel H. T. Tye, C.D., Feb. 7, 1961. *May 24*, Acting Commander P. H. C. Langlais, C.D., RCN(R): to be Honorary Aide-de-Camp. *May 26*, Lieutenant-Commander W. M. Stan, C.D., RCN(R): to be Honorary Aide-de-Camp. *Aug. 12*, 20464 Group Captain A. G. Dagg, C.D.: to be Honorary Aide-de-Camp, effective July 7, 1961.

Queen's Honorary Physicians and Surgeons.—1960. *Oct. 22*, Colonel H. L. Harris, C.D., D.D.S., Director of Dental Services (Navy): to be a Queen's Honorary Dental Surgeon, for tenure of office.

Queen's Privy Council.—1960. *Dec. 21*, Robert Henry McGregor, M.P., Toronto, Ont.: to be a Member of the Queen's Privy Council for Canada.

Senators.—1960. *Nov. 16*, Louis-Philippe Beaubien, Montreal, Que.: to be a member of the Senate and a Senator for the Division of Bedford, in the Province of Quebec. Mrs. Josie Alice Dinan Quart, Quebec, Que.: to be a member of the Senate and a Senator for the Division of Victoria, in the Province of Quebec.

Parliamentary Secretaries.—1960. Warner Herbert Jorgenson, member of the House of Commons for the electoral district of Provencher, Man.: to be Parliamentary Secretary to the Minister of Agriculture for a period of twelve months, effective Oct. 12, 1960.

Deputy Ministers.—1960. *Oct. 18*, Rodrigue Bédard, Hull, Que.: to be Associate Deputy Minister of Justice, effective Nov. 1, 1960. *Nov. 26*, John Darley Braithwaite Harrison, Ottawa, Ont., Director, Forestry Branch, Department of Northern Affairs and National Resources: to be Deputy Minister of Forestry. **1961.** *Feb. 28*, George Vickers Haythorne, Assistant Deputy Minister of Labour, Ottawa, Ont.: to be Deputy Minister of Labour. *June 8*, William Hugh Wilson, Ottawa, Ont., Director of Operations, Post Office Department: to be Deputy Postmaster General, effective June 20, 1961.

Diplomatic Appointments.—1960. The following diplomatic appointments were announced during the year. John Harrison Cleveland: to be Ambassador Extraordinary and Plenipotentiary of Canada to Finland. Arnold Cantwell Smith: to be Ambassador Extraordinary and Plenipotentiary of Canada to the Union of Soviet Socialist Republics. Christopher Campbell Eberts: to be High Commissioner for Canada to Pakistan. Hector Allard: to be Ambassador Extraordinary and Plenipotentiary of Canada to Denmark. John Peter Sigvaldason: to be Ambassador Extraordinary and Plenipotentiary of Canada to Indonesia. Jean Morin: to be Ambassador Extraordinary and Plenipotentiary of Canada to Ecuador. **1961.** The following diplomatic appointments were announced during the year. Robert Arthur Douglass Ford: to be Ambassador Extraordinary and Plenipotentiary of Canada to the United Arab Republic. George Bernard Summers: to be Ambassador Extraordinary and Plenipotentiary of Canada to Iran. Richard Plant Bower: to be Ambassador Extraordinary and Plenipotentiary of Canada to the Republic of Uruguay and Ambassador Extraordinary and Plenipotentiary of Canada to the Republic of Paraguay. Alfred John Pick: to be Ambassador Extraordinary and Plenipotentiary of Canada to the Republic of Bolivia. Jean-Louis Delisle: to be Ambassador Extraordinary and Plenipotentiary of Canada to Costa Rica and concurrent Ambassador to Panama, Honduras and Nicaragua. Paul Augustus Bridle: to be Ambassador Extraordinary and

Plenipotentiary of Canada to Turkey. Paul-André Beaulieu: to be Ambassador Extraordinary and Plenipotentiary of Canada to the Republic of Iraq. Herbert Frederick Brooks-Hill Feaver: to be Ambassador Extraordinary and Plenipotentiary of Canada to Tunisia. Jean Morin: to be Ambassador Extraordinary and Plenipotentiary of Canada to the Republic of Portugal. Thomas Le Mesurier Carter, High Commissioner for Canada in Nigeria: to be concurrently High Commissioner for Canada to Sierra Leone. Robert Arthur Douglass Ford, Ambassador Extraordinary and Plenipotentiary of Canada to the United Arab Republic: to be concurrently Ambassador Extraordinary and Plenipotentiary of Canada to the Republic of the Sudan. George Pirkis Kidd: to be Ambassador Extraordinary and Plenipotentiary of Canada to Cuba. Gordon Gale Crean: to be Ambassador Extraordinary and Plenipotentiary of Canada to Yugoslavia. Miss Blanche Margaret Meagher, Ambassador Extraordinary and Plenipotentiary of Canada to Israel: to be concurrently High Commissioner for Canada to Cyprus. Theodore Francis Moorhouse Newton: to be concurrently Ambassador Extraordinary and Plenipotentiary of Canada to Colombia and Ecuador.

Judicial Appointments.—1960. *Sept. 16*, Hon. R. R. Bell, Charlottetown: to be a Judge of the Supreme Court of Judicature of Prince Edward Island. *Oct. 18*, W. J. C. Kirby, Red Deer: to be a Judge of the Supreme Court of Alberta and a member of the Trial Division of the Supreme Court of Alberta and *ex officio* a member of the Appellate Division of the said Court. Donald Charles Disbery, Saskatoon: to be a Judge of Her Majesty's Court of Queen's Bench for Saskatchewan. *Nov. 2*, Phillippe Lamarre, Montreal, to be a Puisne Judge of the Superior Court for the District of Montreal, Que. George Beverly Puddicombe, Montreal: to be a Puisne Judge of the Superior Court for the District of Montreal, Que. Roger Laroche, Trois Rivières: to be a Puisne Judge of the Superior Court for the District of Trois Rivières, Que. Benjamin Robinson, Montreal: to be a Puisne Judge of the Superior Court for the District of Montreal, Que. *Nov. 16*, Garth H. F. Moore, Toronto: to be a Junior Judge of the County Court of the County of York in the Province of Ontario. *Dec. 19*, Arthur Kelly, Toronto: to be a Judge of the Supreme Court of Ontario and a member of The Court of Appeal for Ontario and *ex officio* a member of the High Court of Justice for Ontario. Hon. Thomas Grantham Norris, a Judge of the Supreme Court of British Columbia: to be a Justice of Appeal of the Court of Appeal for British Columbia, effective Jan. 16, 1961. J. G. A. Hutcheson, Vancouver: to be a Judge of the Supreme Court of British Columbia, effective Jan. 16, 1961. **1961.** *Feb. 24*, N. R. McDonald, Weyburn: to be a Judge of the District Court of Saskatchewan. W. H. Nelson, Prince Albert: to be a Judge of the District Court of Saskatchewan. C. W. Tysoe, Vancouver: to be a Justice of Appeal of the Court of Appeal for British Columbia, effective Mar. 15, 1961. *Feb. 27*, R. D. Guy, Jr., Winnipeg: to be a Judge of the Court of Appeal for Manitoba and *ex officio* a Judge of the Court of Queen's Bench for Manitoba, effective Mar. 1, 1961. Hon. Calvert Charlton Miller, a Judge of the Court of Appeal for Manitoba: to be Chief Justice for the Court of Appeal for Manitoba with the style and title of Chief Justice of Manitoba and *ex officio* a Judge of the Court of Queen's Bench for Manitoba, effective Mar. 1, 1961. R. A. Wootton, Victoria: to be a Judge of the Supreme Court of British Columbia, effective Mar. 1, 1961. F Craig Munroe, New Westminster: to be a Judge of the Supreme Court of British Columbia, effective Mar. 1, 1961. Lucien Tremblay, Montreal: to be Chief Justice of the Court of Queen's Bench in and for the Province of Quebec, effective Apr. 1, 1961. Yves Bernier, Quebec: to be a Puisne Judge of the Superior Court for the District of Quebec in the Province of Quebec, effective Mar. 1, 1961. E. W. S. Kane, Edmonton: to be a Judge of the Supreme Court of Alberta and a member of the Appellate Division of the said Court and *ex officio* a member of the Trial Division of the said Court. Hon. Mr. Justice Frédéric Dorion, a Puisne Judge of the Superior Court of the Province of Quebec: to be Associate Chief Justice of the Superior Court of the said Province, effective Mar. 1, 1961. Hon. Sidney Bruce Smith, a Judge of the Supreme Court of Alberta and a member of the Appellate Division of the said Court: to be Chief Justice of the Supreme Court of Alberta with the style and title of Chief Justice of Alberta and *ex officio* a member of the

Trial Division of the said Court, effective Mar. 1, 1961. A. H. Bence, Saskatoon: to be Chief Justice of Her Majesty's Court of Queen's Bench for Saskatchewan, effective Mar. 1, 1961. Hon. Emmett Matthew Hall, Chief Justice of Her Majesty's Court of Queen's Bench for Saskatchewan: to be Chief Justice of the Court of Appeal for Saskatchewan with the style and title of Chief Justice of Saskatchewan, and *ex officio* a Judge of Her Majesty's Court of Queen's Bench for Saskatchewan, effective Mar. 1, 1961. William D. Parker, Hamilton: to be a Judge of the Supreme Court of Ontario and a Member of the High Court of Justice for Ontario and *ex officio* a member of the Court of Appeal for Ontario, effective Mar. 1, 1961. Hon. William B. Scott, Associate Chief Justice of the Superior Court of the Province of Quebec: to be Chief Justice of the Superior Court of the said Province, effective Mar. 1, 1961. A. C. Hall, Oshawa: to be a Judge of the County Court of the County of Ontario in the Province of Ontario, and also a Local Judge for the High Court of Justice for Ontario during his tenure of office as Judge of the said County Court. *Feb. 28*, E. W. Grant, New Toronto: to be a Judge of the County Court of the County of Peel in the Province of Ontario. *Mar. 9*, F. W. Bissett, Halifax: to be a Judge of the Supreme Court of Nova Scotia and a Judge of the Court for Divorce and Matrimonial Causes of the Province of Nova Scotia. Antoine Rivard, Quebec: to be a Puisne Judge of the Court of Queen's Bench in and for the Province of Quebec. *Mar. 21*, His Hon. Erastus William Grant, a Judge of the County Court of the County of Peel, in the Province of Ontario: to be a Local Judge of the High Court of Justice for Ontario, in the Province of Ontario, during his tenure of office as Judge of the said County Court. *Mar. 30*, Gérard Corriveau, Quebec: to be a Puisne Judge of the Superior Court for the District of Quebec, in the Province of Quebec. *May 18*, Linden Smith, Prothonotary of the Supreme Court of Nova Scotia at the City of Halifax, in the said Province: to be Registrar of the Exchequer Court of Canada on its Admiralty Side for the Admiralty District of the Province of Nova Scotia. *June 13*, Hon. Marshall Edward Manning, a Judge of the Supreme Court of Alberta and a member of the Trial Division of the said Court, Edmonton: to be a Deputy Judge of the Yukon Territorial Court for the purpose of presiding over the proceedings instituted against Henry Heinz Regehr pursuant to Section 19 of the Legal Profession Ordinance of the Yukon Territory. M. J. Woods, Saskatoon: to be a Judge of the Court of Appeal for Saskatchewan and *ex officio* a Judge of Her Majesty's Court of Queen's Bench for Saskatchewan. M. A. MacPherson, Jr., Regina: to be a Judge of Her Majesty's Court of Queen's Bench for Saskatchewan. Léon H. Bénard, Winnipeg: to be a Judge of the County Courts of the Central Division of the Eastern Judicial District in the Province of Manitoba. *June 16*, F. Raymond Hannen, Montreal: to be a Puisne Judge of the Superior Court for the District of Montreal, in the Province of Quebec. W. D. Ferry, Prince George: to be a Judge of the County Court of Cariboo in the Province of British Columbia, and a Local Judge of the Supreme Court of British Columbia. *June 30*, Omer H. Chartrand, Hawkesbury: to be a Judge of the County Court of the United Counties of Prescott and Russell in the Province of Ontario and also a Local Judge of the High Court of Justice for Ontario during his tenure of office as Judge of the said County Court. *July 11*, J. A. MacDonald, Charlottetown: to be District Judge in Admiralty of the Exchequer Court of Canada in and for the Admiralty District of the Province of Prince Edward Island.

Miscellaneous.—1960. *Oct. 28*, Marius D'Amours, Prothonotary of the Superior Court and Registrar in Bankruptcy, Rivière du Loup, Que.: to be Official Receiver for Bankruptcy Division No. 10 of the District of Quebec, *vice* Paul-Yvan Marquis, resigned. *Nov. 16*, Erik J. Spicer, Ottawa, Ont.: to be Parliamentary Librarian. *Dec. 1*, David M. McLean: to be Warden of Kingston, Ont., penitentiary; Charles E. DesRosiers: to be Warden of Dorchester, N.B., penitentiary; and Frederick S. Harris: to be Warden of Stony Mountain, Man., penitentiary. Miss Isabel Janet Macneil: to be Superintendent of prison for women at Kingston, Ont., penitentiary. *Dec. 14*, Stewart Sawle MacInnes, Welland, Ont., and Keith Lougheed, Niagara Falls, Ont.: to be Canadian members of the Buffalo and Fort Erie Public Bridge Authority, *vice* Allan Lewis Brooks, deceased, and William G. Stamp, deceased, effective Dec. 15, 1960. *Dec. 16*, Jack Fowlie Worsell, Registrar in

Bankruptcy at Whitehorse, Y.T.: to be Official Receiver for the Bankruptcy District of the Yukon Territory, *vice* Robert John Friend. **1961.** *Jan. 16*, D. M. Johnson, former Canadian Ambassador to the Union of Soviet Socialist Republics, on loan to the United Nations Organization: to be resident representative of the Technical Assistance Board, Nigeria. *Mar. 21*, Alexander Jardine Reeve, Executive Assistant to the Commissioner of the Yukon Territory: to be an Administrator to execute the office and functions of the Commissioner during the Commissioner's absence due to illness which commenced on Mar. 15, 1961. *Mar. 28*, Hon. Calvert Charlton Miller, Chief Justice of Manitoba: to be during pleasure the administrator of the government of the Province of Manitoba whenever the Lieutenant-Governor of the Province of Manitoba is unable to execute his functions by reason of absence, illness or other inability. Hon. Sidney Bruce Smith, Chief Justice of Alberta, to be during pleasure the administrator of the government of the Province of Alberta whenever the Lieutenant-Governor of the Province of Alberta is unable to execute his functions by reason of absence, illness or other inability. Hon. André Taschereau, a Puisne Judge of the Court of Queen's Bench in and for the Province of Quebec: to be during pleasure the administrator of the government of the Province of Quebec whenever the Lieutenant-Governor of the Province of Quebec is unable to execute his functions by reason of absence, illness or other inability. Thomas Howard Wyndham Harding, Registrar of the Supreme Court, Registrar of the County Court and Registrar of Bankruptcy, Prince Rupert, B.C.: to be Official Receiver for Bankruptcy Division No. 1, of the District of British Columbia, *vice* William David Sutherland, resigned. R. J. Berry, National Research Council; A. W. Tickner, National Research Council; and G. H. Faye, Department of Mines and Technical Surveys: to be Assay Commissioners to meet in the year 1961 to examine and test coins of the currency of Canada struck at the Royal Canadian Mint during the year 1960. *June 15*, Linden M. Smith, Prothonotary of the Supreme Court, Halifax, N.S.: to be Official Receiver for Bankruptcy Division No. 1 of the Province of Nova Scotia, *vice* Charles Lamb, deceased. *June 20*, Chief Justice Emmett M. Hall, Regina, Sask.; Miss Alice Girard, R.N., Montreal, Que.: David M. Baltzan, Saskatoon, Sask.; O. J. Firestone, Ottawa, Ont.: M. Wallace McCutcheon, Toronto, Ont.: C. L. Strachan, London, Ont.; and Arthur F. Van Wart, Fredericton, N.B.: to be Commissioners under Part I of the Inquiries Act to inquire into and report upon the existing facilities and the future need for health services for the people of Canada, Chief Justice Hall to be Chairman. *July 8*, Her Royal Highness the Princess Royal, C.I., G.C.V.O., G.B.E., R.P.C., T.D., C.D.: to be Colonel-in-Chief of The Royal Regiment of Canada. *July 15*, Hon. Robert Taschereau, Hon. Charles Holland Locke, Hon. J. R. Cartwright, Hon. Gérald Fauteux, Hon. Douglas Charles Abbott, Hon. Ronald Martland, Hon. Wilfred Judson, Hon. Roland Almon Ritchie, Mr. Esmond Unwin Butler and Mr. Edmond Joly de Lotbinière: to be Deputy Administrators. *July 26*, Col. Adolphe George Cherrier, O.B.E., C.D.: to be Deputy Administrator of the Government of Canada, effective Aug. 1, 1961. *July 31*, Frank Boyd Fingland, Whitehorse, Y.T.: to be Deputy Registrar of Titles for the Yukon Land Registration District.

Government Appointments to Miscellaneous Boards, Commissions, etc.

Army Benevolent Fund Board.—1960. *Dec. 14*, Brigadier I. S. Johnston, C.B.E., D.S.O., E.D., Q.C.: to be a member.

Bank of Canada.—1961. *Feb. 23*, John T. Bryden, Toronto, Ont.; J. H. Mowbray Jones, Liverpool, N.S.; Brigadier Lorraine Patrick, Calgary, Alta.; and C. Bruce Hill, St. Catharines, Ont.: to be Directors for a term of three years commencing Mar. 1, 1961. *July 24*, Louis Rasminsky: to be Governor for a term of seven years, *vice* James E. Coyne, resigned.

Board of Broadcast Governors.—1960. *Dec. 21*, Carlyle Allison, a full-time member: to be Vice-Chairman, effective Jan. 1, 1961. Bernard Goulet, Montreal, Que.: to be a full-time member, effective Jan. 1, 1961. **1961.** *Apr. 28*, John B. Lewis, Montreal, Que.: to be a part-time member for a period of five years, *vice* Mrs. R. G. Gilbride, resigned.

Board of Grain Commissioners.—1961. *Mar. 28*, George Newton McConnell, a Commissioner: to be Chief Commissioner, *vice* R. W. Milner, retired; and Alfred Vincent Svoboda, an Assistant Grain Commissioner: to be a Commissioner, *vice* C. N. McConnell.

Board of Transport Commissioners for Canada.—1961. *July 17*, Alfred Sidney Kirk, Director of Traffic, Board of Transport Commissioners for Canada: to be a member, effective Jan. 3, 1962, *vice* Commissioner L. J. Knowles.

Canada Council.—1961. *May 17*, Lady Dunn, St. Andrews, N.B.: Mme Ginette-P. Trépanier, Quebec, Que.; Monsignor Basil Kushnir, D.D., Winnipeg, Man.; Rabbi David Monson, Toronto, Ont.; and Douglas Black Weldon, M.C., London, Ont.: to be members for the term of three years.

Canadian Commercial Corporation.—1960. *Nov. 16*, Marc-Henri Lamoureux, Montreal, Que.: to be President.

Canadian Pension Commission.—1960. *Dec. 31*, Wilbur T. Nixon, Rockcliffe Park, Ont.: to be an *ad hoc* member for one year from Jan. 1, 1961. **1961.** *Feb. 24*, Brigadier C. B. Topp, C.B.E., D.S.O., M.C. and Bar: to be an *ad hoc* member for one year from Mar. 15, 1961. *Mar. 23*, David G. Decker, an *ad hoc* member; to be an *ad hoc* member for a further period May 30 to June 30, 1961. David G. Decker: to be a member for a period of ten years, effective July 1, 1961, *vice* Commissioner Dr. L. W. Brown. *July 17*, O. F. B. Langelier, M.C.: to be an *ad hoc* member for one year from Sept. 1, 1961. *July 24*, William D. Flatt, Ottawa, Ont.: to be an *ad hoc* member for one year from Sept. 1, 1961.

Central Mortgage and Housing Corporation.—1961. *July 17*, Stewart Bates Ottawa, Ont.: to be again President for a further term of seven years, effective Dec. 6, 1961.

Defence Research Board.—1961. *Mar. 9*, David L. Thomson, Montreal, Que.; and Louis-Philippe Bonneau, Quebec, Que.: to be members for a period of three years commencing Apr. 1, 1961.

Fisheries Research Board of Canada.—1960. *Dec. 8*, C. W. Argue, Dean of Science, University of New Brunswick, Fredericton: to be a member for a five-year term, effective Jan. 1, 1961.

Historic Sites and Monuments Board of Canada.—1960. *Nov. 2*, Major Charles Gwyllym Dunn, Quebec, Que.: to be a member for a term of three years. **1961.** *Mar. 23*, John P. Palmer, Saint John: to be a member representing the Province of New Brunswick for a term of three years, *vice* A. G. Bailey, resigned. *May 4*, Donald Agnew, Prince Albert: to be a member representing the Province of Saskatchewan for a period of three years, effective May 18, 1961. *June 19*, Edward B. Foran, St. John's: to be a member representing the Province of Newfoundland for a period of three years from July 10, 1961. *June 29*, Marcel Trudel, Quebec: to be a member representing the Province of Quebec for a term to expire Mar. 31, 1964.

International Commission for the Northwest Atlantic Fisheries.—1961. *Feb. 24*, H. R. V. Earle, St. John's, Nfld.: to be a Commissioner for a period of two years from Mar. 1, 1961. *Apr. 18*, J. Howard MacKichan, Halifax, N.S.: to be a Commissioner for a further period of two years, effective May 28, 1961.

Medical Council of Canada.—1961. *Mar. 28*, Joseph Edward Josephson, St. John's, Nfld.; John Frederick McInerney, Fredericton, N.B.; and Harold Melvyn Taylor, Tavistock, Ont.: to be members for a term of four years.

National Capital Commission.—1960. *Dec. 6*, Mrs. Henry F. Gyles, Winnipeg, Man.: to be a member for the term expiring Feb. 6, 1962, *vice* Mrs. Olive Irvine. *Dec. 21*, Mrs. Ireta Sutherland, Charlottetown, P.E.I.: to be a member for the period expiring

Feb. 6, 1962, *vice* A. Walthen Gaudet, resigned. Brigadier G. E. Beament, Ottawa, Ont.: to be a member for the period expiring Feb. 6, 1962, *vice* David L. Burgess, deceased. **1961.** *Jan. 19*, John Bracken, Manotick, Ont.; J. A. Hagerman, Saskatoon, Sask.; M. M. Maclean, Ottawa, Ont.; J.-N. Morin, Aylmer, Que.; J. M. Wardle, Ottawa, Ont.; and J. Gardner Boultbee, Kamloops, B.C.: to be members for the term of two years, effective Feb. 6, 1961.

National Energy Board.—1961. *June 8*, Ian N. McKinnon: to be a member and Chairman for a term of one year, effective Aug. 15, 1961.

National Film Board.—1960. *Dec. 6*, R. Gordon Robertson, Deputy Minister, Department of Northern Affairs and National Resources, Ottawa: to be a member for a further period of three years, commencing Dec. 23, 1960. **1961.** *Jan. 24*, Lieutenant-Colonel C. C. I. Merritt, V.C., E.D., Vancouver, B.C.: to be a member for a further period of three years, commencing Jan. 28, 1961. *May 27*, Mrs. Keith Rand, Port Williams, Kings County, N.S.: to be a member for the period expiring Feb. 3, 1962, *vice* Frank Arnett, deceased.

National Library Advisory Council.—1960. *Dec. 21*, Peter Grossman, Vancouver, B.C.; Mrs. Marion Sherman, Prince Albert, Sask.; and Mrs. Grace Sparks, St. John's, Nfld.: to be members for a period of four years commencing Jan. 1, 1961. George Frederick Clarke, Woodstock, N.B.: to be a member for a period of one year commencing Jan. 1, 1961.

National Productivity Council.—1961. *Feb. 27*, H. George De Young, Welland, Ont.: to be a member and Chairman for a term of three years effective Mar. 1, 1961. John G. Dickinson, Montreal, Que.: to be a member and Executive Director for a term of one year, effective Mar. 1, 1961. *Feb. 28*, N. R. Crump, Montreal, Que.; Claude Jodoin, Ottawa, Ont.; Marcel Pepin, Quebec, Que.: H. H. Hannam, Ottawa, Ont.; W. H. Kirkpatrick, Montreal, Que.; A. Russell Harrington, Halifax, N.S.; and A. H. Zimmerman, Ottawa, Ont.: to be members for a term of three years. Jean Raymond, Montreal, Que.; A. R. Gibbons, Ottawa, Ont.; M. H. Nicols, Toronto, Ont.; H. R. MacMillan, Vancouver, B.C.; Miss A. Speers, Winnipeg, Man.; Ray Milner, Edmonton, Alta.; George Haythorne, Ottawa, Ont.; and John Convey, Ottawa, Ont.: to be members for a term of two years. George C. Metcalf, Toronto, Ont.; E. P. Taylor, Toronto, Ont.; J. D. Carroll, Toronto, Ont.; René Trépanier, Oka, Que.; J. R. Brownlee, Winnipeg, Man.; S. Buckwold, Saskatoon, Sask.; J. F. Cauley, Ottawa, Ont.; and B. G. Barrow, Ottawa, Ont.: to be members for a term of one year.

National Research Council.—1961. *Feb. 15*, H. E. Duckworth, Professor and Chairman of the Department of Physics, McMaster University, Hamilton, Ont.; Claude Jodoin, President, Canadian Labour Congress, Ottawa, Ont.; C. J. Mackenzie, Ottawa, Ont.; J. W. T. Spinks, President, University of Saskatchewan, Saskatoon, Sask.; and J. Tuzo Wilson, Professor of Geophysics, University of Toronto, Toronto, Ont.: to be members for a term of three years, from Apr. 1, 1961 to Mar. 31, 1964. *Mar. 10*, Harry Emmet Gunning, Professor and Head of the Department of Chemistry, University of Alberta, Edmonton: to be a member for a term of three years from Apr. 1, 1961 to Mar. 31, 1964.

National Technical and Vocational Training Advisory Council.—1961. *Feb. 24*, G. Fred McNally, formerly Chairman of the Vocational Training Advisory Council, Edmonton, Alta.: to be a member for a term of three years, and Chairman of the said Council. *Apr. 28*, Fraser Fulton, Horace Laverdure, Mrs. Rex Eaton, N. D. Cochrane, M. MacKenzie, Jean Delorme and B. F. Addy: to be members for a period expiring Dec. 1, 1961. G. H. Paquette, S. T. Payne, Mrs. F. R. Duminy, W. H. Sands, Edward D. MacPhail, Maurice Barriere and B. Scott Bateman: to be alternates for a period expiring Dec. 1, 1961. W. F. McMullen, J. MacKenzie, J. A. Verguson, A. W. Crawford, J. A. Doyle, J. W. McNutt and W. D. Mills: to be members for a period expiring Dec. 1, 1962. L. M. Schram, J. Lyle Boisvert, David Kirk, W. W. Sharpe, F. E. MacDiarmid and George

E. MacDonald: to be alternates for a period expiring Dec. 1, 1962. P. D. Dalton, Max Swerdlow, J. F. K. English, R. E. Byron, S. D. Rendall and Frank Templeman: to be members for a period expiring Dec. 1, 1963. S. D. C. Chutter, A. E. Hemming, J. S. White, W. H. Swift, A. M. Moon and P. J. Hanley: to be alternates for a period expiring Dec. 1, 1963.

Northwest Territories Council.—1960. *Sept. 29*, Wilfred George Brown, Chief, Territorial Division, Department of Northern Affairs and National Resources: to be a member and Deputy Commissioner of the Northwest Territories. *Dec. 22*, H. M. Jones, Director, Indian Affairs Branch, Department of Northern Affairs and National Resources; and L. A. Desrochers, Edmonton, Alta.: to be members. **1961.** *Jan. 11*, D. M. Coolican, Ottawa, Ont.; and I. Norman Smith, Ottawa, Ont.: to be members.

Tariff Board.—1961. *Apr. 7*, George Herbert Glass, a member: to be first Vice-Chairman. Francis Leo Corcoran, a member: to be second Vice-Chairman. *May 4*, Walter Donald Ridley Eldon, London, Ont.: to be a member for a term of ten years, effective May 15, 1961.

Tax Appeal Board.—1961. *Mar. 23*, Reginald Sydney Walter Fordham, Ottawa, Ont.: to be again a member, effective Apr. 1, 1961, for a period of ten years. *June 9*, John Douglas Charles Boland, Ottawa, Ont.: to be a member for a period of ten years.

War Veterans Allowance Board.—1961. *June 27*, Gilmour F. Schoales, Winnipeg, Man.: to be a temporary member, effective July 15, 1961.

PART IV.—FEDERAL LEGISLATION, 1960-61

This classified list of federal legislation has been compiled from the Statutes. Naturally in summarizing material of this kind it is not always possible to convey the full implication of the legislation. The reader who is interested in any specific Act is therefore referred to the Statutes of Canada in the given volume and chapter.

Legislation of the Fourth Session of the Twenty-Fourth Parliament, Nov. 17, 1960 to July 13, 1961

Subject, Chapter and Date of Assent	Synopsis
9-10 Eliz. II	
Agriculture—	
22 June 1	*An Act to amend the Farm Improvement Loans Act* increases by $100,000,000 the aggregate principal amount of loans which may be made in the loan period ending June 30, 1962.
30 June 22	*The Agricultural Rehabilitation and Development Act* authorizes the Federal Government to enter into agreement with a provincial government for the joint undertaking of alternative land use projects and rural development projects in order to assist farmers with small or otherwise unprofitable units and promote the conservation of soil and water resources.
36 June 22	*An Act to amend the Farm Credit Act* increases the capital of the Farm Credit Corporation from $8,000,000 to $12,000,000 and thus, in effect, increases the maximum lending authority under the Act from $200,000,000 to $300,000,000.
Domestic Trade—	
5 Dec. 20	*The Small Businesses Loans Act* provides, by way of a guarantee of loans made by banks, for intermediate and short-term credit to proprietors of small business enterprises, for the improvement and modernization of equipment and premises.
20 June 1	*The Coal Production Assistance Act* amends the loan agreement made with Bras d'Or Coal Company Limited by removing the obligation of the company to make repayments during the period July 1, 1960-June 30, 1962 and requiring the resumption of repayments on Dec. 31, 1962.

Legislation of the Fourth Session of the Twenty-Fourth Parliament, Nov. 17, 1960 to July 13, 1961—continued

Subject, Chapter and Date of Assent	Synopsis
Domestic Trade— concluded	
24 June 1	*The National Design Council Act* provides for the establishment of a National Design Council, the objects of which are to promote and expedite improvement of design in the products of Canadian industry.
50 July 13	*An Act to amend the Industrial Development Bank Act* extends the definition of "industrial enterprise" to include any industry, trade or other business undertaking of any kind; it also increases the authorized capital of the Bank from $25,000,000 to $50,000,000, the borrowing authority of the Bank from three to five times the aggregate amount of its paid-up capital and reserve fund, and the permissible liabilities of the Bank above $200,000, from a maximum of $75,000,000 to a maximum of $200,000,000. Other amendments relate to administration of the Act.
51 July 13	*An Act to amend the Loan Companies Act* effects certain changes in the investment powers of loan companies incorporated by Parliament, in order that they may correspond more closely to the investment powers of insurance companies.
55 July 13	*An Act to amend the Trust Companies Act* effects certain changes in the investment powers of trust companies incorporated by Parliament, in order that they may correspond more closely to the investment powers of insurance companies.
Finance—	
3 Dec. 20	*Appropriation Act No. 7, 1960* grants certain sums of money for the public service of the financial year ending Mar. 31, 1961
11 Mar. 29	*Appropriation Act No. 1, 1961* grants certain sums of money for the public service of the financial year ending Mar. 31, 1961.
12 Mar. 29	*Appropriation Act No. 2 1961* grants certain sums of money for the public service of the financial year ending Mar. 31, 1961.
15 Mar. 29	*An Act to amend the Fire Losses Replacement Account Act* makes the account available to proprietary corporations named in Schedule D to the Financial Administration Act.
27 June 8	*Appropriation Act No. 3, 1961* grants certain sums of money for the public service for the financial year ending Mar. 31, 1962.
40 July 13	*Appropriation Act No. 4, 1961* grants certain sums of money for the public service for the financial year ending Mar. 31, 1962.
48 July 13	*An Act to amend the Financial Administration Act* places the Crown in the same position as a private person as regards an assignment of a Crown debt incurred under a contract; amounts payable by the Crown in respect of salary and wages may not be assigned. Other amendments refer to uncollectable debts due to Her Majesty and recovery of overpayments of salary, wages, etc.
Fisheries—	
14 Mar. 29	*An Act to amend the Coastal Fisheries Protection Act* revises the definition of a "Canadian fishing vessel"; to be considered within this category, a vessel must comply with the requirements set forth.
23 June 1	*An Act to amend the Fisheries Act* amends the basic legislation under which the fisheries of Canada are administered to bring it into line with present-day requirements and practices. The major amendments permit small draggers to operate up to the three-mile limit on the East Coast; extend the powers of regional and provincial officers in conservation practices; increase penalties in order to cope with problems of water pollution; and relieve fishery officers of the responsibility of exercising any judicial functions and place it in the hands of the courts.
Health and Welfare—	
26 June 1	*Vocational Rehabilitation of Disabled Persons Act* provides for federal sharing of costs incurred by the provinces in carrying out programs of vocational rehabilitation for disabled persons. The Act also encourages the development and co-ordination of federal activities in the field of rehabilitation and the conduct of research in such field
35 June 22	*An Act to provide for the Control of Narcotic Drugs* completely revises previous narcotic legislation and represents a different approach to the control of distribution and sale of narcotics. Part I of the Act has two aspects relating, respectively, to enforcement and the legal distribution of narcotics in accordance with the regulations. Part II deals with the control and custody of narcotic addicts for the purpose of treatment.

Legislation of the Fourth Session of the Twenty-Fourth Parliament, Nov. 17, 1960 to July 13, 1961—continued

Subject, Chapter and Date of Assent	Synopsis
Health and Welfare—concluded	
37 June 22	*An Act to amend the Food and Drugs Act* provides for more effective control of certain drugs, commonly referred to as "goof-balls", for the licensing of persons dealing with such drugs and other matters designed to limit to medical purposes their importation, manufacture, distribution and use.
Insurance—	
13 Mar. 29	*An Act to amend the Canadian and British Insurance Companies Act* makes certain changes in the investment and other powers of Canadian insurance companies and corresponding changes with respect to the classes of assets held in Canada by British insurance companies to cover their liabilities in Canada, as well as other technical amendments proved to be desirable.
16 Mar. 29	*An Act to amend the Foreign Insurance Companies Act* makes certain changes with respect to the classes of assets held in Canada by foreign insurance companies and foreign fraternal societies to cover their liabilities in Canada, as well as other technical amendments proved to be desirable.
33 June 22	*An Act to amend the Export Credits Insurance Act* increases the resources available for the export financing facilities, making it possible for Canadian exporters to sell capital equipment on long-term credit to foreign buyers.
Justice—	
21 June 1	*An Act to amend the Criminal Code* (*Race Meetings*) makes certain changes respecting length of race meetings and number of races per calendar day.
38 June 22	*An Act to amend the Judges Act and the Exchequer Court Act* provides for the appointment of seven additional judges.
42 July 13	*An Act to amend the Combines Investigation Act and Criminal Code* extends for a further year ending Dec. 31, 1962, the moratorium respecting the British Columbia fishing industry.
43 July 13	*An Act to amend the Criminal Code* makes a variety of revisions to the Code, the major amendments being the adoption of a definition and provisions dealing with individuals classed as dangerous sexual offenders, the provision for preventive detention of habitual criminals, the restoration of dangerous driving of motor vehicles as an offence under the Criminal Code, and the transfer to the Criminal Code from the Canada Shipping Act of regulations concerning the operation of small vessels.
44 July 13	*An Act to amend the Criminal Code* (*Capital Murder*) revises the provisions of the Code dealing with the death penalty and also the provisions dealing with the trial of a person charged with an offence for which the penalty is death.
53 July 13	*The Penitentiary Act* replaces previous legislation governing the operation of Canada's penitentiaries. The new Act provides the authority necessary to develop, in the Canadian federal correctional system, those features that relate particularly to the operation of the penitentiaries and is designed to enable the penitentiary service to take full advantage of recent developments made in the science of correcting the offender.
Revenue—	
17 Mar. 29	*An Act to amend the Income Tax Act* makes a number of changes in the Act mainly with respect to computation of student income, repeal of surtax on investment income, application of corporation tax rate in certain income brackets, exemption of pension trusts or corporations, conditions of qualification for investment company classification and gradual application of amendment tax payable by non-resident individuals and corporations on dividends or interest earned in Canada and business conducted in Canada.
18 Mar. 29	*An Act to amend the Tariff Board Act* increases the membership of the Board from five to seven and makes other administrative changes providing for its continuing effective operation.
19 June 1	*The Canada-United States of America Estate Tax Convention Act, 1961* implements the Convention entered into between the Governments of Canada and the United States for the avoidance of double taxation and the prevention of fiscal evasion with respect to taxes on the estates of deceased persons, signed at Washington Feb. 17, 1961.
45 July 13	*An Act to amend the Customs Tariff* implements the Budget Resolution relating to the Customs Tariff.

Legislation of the Fourth Session of the Twenty-Fourth Parliament, Nov. 17, 1960 to July 13, 1961—continued

Subject, Chapter and Date of Assent	Synopsis
Revenue—concluded	
46 July 13	*An Act to amend the Excise Act* implements the Budget Resolution relating to the Excise Act.
47 July 13	*An Act to amend the Excise Tax Act* implements the Budget Resolution relating to the Excise Tax Act.
49 July 13	*An Act to amend the Income Tax Act* makes extensive changes to the Act relating mainly to certain deductions allowable in computing income for tax purposes, to deferred profit sharing plans, to reduction of personal and income corporation taxes for the years 1962-66 in accordance with new fiscal arrangements with the provinces, and to exemption from income tax for non-profit corporations promoting or carrying on scientific research in Canada.
Transportation—	
2 Dec. 2	*The Railway Operation Continuation Act* provides for the continuation of the operation of railways until May 15, 1961, following the failure of collective bargaining between the major railway companies and representatives of their non-operating employees to produce agreement.
7 Mar. 9	*An Act respecting the Construction of a line of railway in the Province of Quebec by the Canadian National Railway Company from a point at or near mile 72 of the Kiask Falls Subdivision in a northwesterly direction to a point in the vicinity of Mattagami Lake.*
8 Mar. 9	*An Act to repeal certain Laws relating to the Signal Station at Halifax*, such laws referring to the collection of a tax for a serivce now no longer provided.
28 June 8	*An Act to amend the Canadian National Railway Act* increases the number of members of the Board of Directors of the CNR from seven to twelve.
29 June 8	*An Act to amend the Freight Rates Reduction Act* extends for one year the rates applicable under the Freight Rates Reduction Act and increases the authorized expenditure under the Act by $20,000,000.
32 June 22	*An Act to amend the Canada Shipping Act* changes the legislation governing the regulation and administration of shipping to keep it in line with continuing developments. The amendment contains revised definitions of home-trade voyage, inland waters and minor waters; corrects an anomaly with regard to the position of companies incorporated under Irish law in the matter of ship registry; adjusts the tonnage floor with regard to the registration of pleasure yachts; extends authority to maintain safety measures in the operation of small pleasure craft; includes extensive changes regarding the requirement for engineering personnel on ships; and gives additional powers to marine search and rescue co-ordinators.
34 June 22	*An Act to amend the Government Property Traffic Act* increases the penalty for violation of the Act and provides for the voluntary payment of fines.
41 July 13	*The Canadian National Railways Financing and Guarantee Act, 1961* authorizes the provision of moneys to meet certain capital expenditures of the CNR for the period Jan. 1, 1961 to June 30, 1962 and authorizes the guarantee of certain securities to be issued by that company.
54 July 13	*An Act to amend the Railway Act* applies to rapeseed the rates applicable to flaxseed by virtue of the Crow's Nest Pass Agreement.
Veterans Affairs—	
10 Mar. 9	*An Act to amend the Pension Act* provides for increased pensions to disabled veterans and their dependants and increases the scale of pensions for death; permits payment of certain supplementary pensions; permits appeals from decisions of the former Board of Pension Commissioners; and brings up to date certain aspects of the legislation in connection with administration.
39 June 22	*An Act to amend the War Veterans Allowance Act, 1952* increases the monthly rate of allowance payable to recipients, increases the maximum total annual income allowed and includes as recipients certain blind persons.

Legislation of the Fourth Session of the Twenty-Fourth Parliament, Nov. 17, 1960 to July 13, 1961—concluded

Subject, Chapter and Date of Assent	Synopsis
Miscellaneous—	
1 Dec. 2	*An Act to amend the National Housing Act, 1954* is intended to encourage the demand for housing by increasing the loan ratios and extending the periods of repayment for loans made to home owners and home builders and for rental housing; increases from $25,000,000 to $50,000,000 the amount that may be paid out of the Consolidated Revenue Fund for urban redevelopment; increases from $200,000,000 to $500,000,000 the amount of home improvement loans that may be guaranteed by the CMHC; authorizes the Corporation to undertake jointly with provincial governments and municipalities the acquisition, improvement and conversion of existing buildings for housing purposes; authorizes loans to universities for student residential accommodation; authorizes loans to assist in the construction of sewage projects, etc.
4 Dec. 20	*The National Productivity Council Act* provides for the establishment of the said Council, the functions of which are to provide expanding opportunities for increased employment and trade and rising national standards of living by expediting continuing improvement in productive efficiency in the various aspects of Canadian economic activity.
6 Dec. 20	*The Technical and Vocational Training Assistance Act* provides financial assistance for the development and operation of technical and vocational training facilities and programs throughout Canada.
9 Mar. 9	*An Act to amend the Indian Act* removes from the Act the provisions enabling the Governor in Council to enfranchise Indians or bands of Indians without their consent.
25 June 1	*An Act to amend the Representation Act* changes the name of the electoral district of "Humboldt-Melfort" to "Humboldt-Melfort-Tisdale".
52 July 13	*An Act to amend the National Energy Board Act* makes amendments found necessary as a result of the experience obtained in administering the Act for about 18 months and following the consideration of informal submissions received from the oil, gas and pipeline industries.
31 June 22	*An Act to amend the Army Benevolent Fund Act* increases the rates of interest to be credited to the Fund by the Receiver General and makes other administrative changes.

PART V.—CANADIAN CHRONOLOGY

Events in the general chronology from 1497 to 1866 are given in the 1951 Year Book, pp. 46-49; from 1867 to 1953 in the 1954 Year Book, pp. 1259-1264; for 1954 in the 1955 Year Book, pp. 1329-1330; for 1955 in the 1956 edition, pp. 1233-1234; for 1956 in the 1957-58 edition, p. 1270; for 1957 in the 1959 edition, p. 1240; and for 1958 in the 1960 edition, pp. 1255-1256. References regarding federal and provincial elections or changes in legislatures or ministries are not included in the following listing but may be found in Chapter II on Constitution and Government.

1959

January: *Jan 1*, Federal-Provincial Hospital Plan went into effect in Ontario and Nova Scotia.

February: *Feb. 20*, Production of the *CF-105 Arrow* discontinued. *Feb. 23*, Celebration of the 50th anniversary of flight in Canada at Bras d'Or Lake, N.S., scene of the first "Silver Dart" flight.

March: *Mar. 17*, Death of Dr. Sidney Earle Smith, Minister of the Department of External Affairs. *Mar. 18*, Prime Minister Macmillan of the United Kingdom arrived in Ottawa for discussions on the situation in Germany, following talks in Russia and France and en route to Washington.

April: *Apr. 10*, Canada's first privately owned and operated nuclear research reactor officially opened at McMaster University. *Apr. 25*, The St. Lawrence Seaway opened to navigation. *Apr. 26*, Premier Castro of Cuba visited Montreal.

May: *May 20*, Prime Minister Menzies of Australi visited Ottawa.

June: *June 5-10*, The Atlantic Congress, consisting of over 600 Parliamentarians and distinguished citizens from NATO countries met at London, England, to examine the record of the first ten years of NATO and discuss prospects for the next ten years; 60 Canadian delegates attended. *June 18*, Her Majesty Queen Elizabeth and Prince Philip arrived at Torbay, Nfld., to begin a 45-day coast-to-coast tour of Canada. *June 20*, Thirty-five fishermen lost their lives in a violent storm in Northumberland Strait. *June 26*, The St. Lawrence Seaway officially opened by Her Majesty Queen Elizabeth and President Eisenhower of the United States in a historic ceremony at St. Lambert, Que.

July: *July 1*, Federal-Provincial Hospital Plan went into effect in New Brunswick. *July 2*, Japan and Canada signed pact pledging co-operation in the peaceful uses of atomic energy. *July 9*, Canadian Brotherhood of Railway, Transport and General Workers was declared by the Canadian Labour Relations Board the bargaining agent of a system-wide unit of operating maintenance employees of the St. Lawrence Seaway Authority. *July 15-29*, A Canadian delegation, headed by the Hon. George Drew, attended the Commonwealth Education Conference in Oxford, England, implementing the program proposed by Canada at the Commonwealth Economic Conference held at Montreal in September 1958. *July 17*, The Canadian Government announced the creation of an Emergency Measures Organization to function in the event of a sudden nuclear war. *July 18*, The Canadian Government announced the creation of a five-man National Energy Board to have wide powers over the oil and natural gas industries and international electric power connections. *July 22*, Official opening of the Queen Elizabeth Power Generating Station (Saskatchewan Power Corporation) at Saskatoon by Her Majesty Queen Elizabeth.

August: *Aug. 1*, The Federal Cabinet met in Halifax, N.S., to bid farwell to Her Majesty Queen Elizabeth and Prince Philip who left by air for London, England. *Aug. 17*, Northern Affairs Minister Hamilton announced the discovery of oil at Eagle Plain, Yukon Territory—the first such discovery in the Yukon.

September: *Sept. 7*, Death of Maurice Duplessis, Premier of Quebec Province for the past 18 years, at Schefferville, Que. *Sept. 9*, Announcement that Canada's first large nuclear power station will be built on the shores of Lake Huron, nine miles north of Kincardine at an estimated cost of $60,000,000. *Sept. 10*, The Hon. Jean-Paul Sauvé chosen to succeed the late Maurice Duplessis as Premier of the Province of Quebec. *Sept. 13*, Two-hundredth anniversary of the battle of the Plains of Abraham. *Sept. 15*, Major-General Georges P. Vanier, D.S.O., M.C., C.D., assumed office as Governor General of Canada succeeding the Rt. Hon. Vincent Massey. Fourteenth session of the General Assembly of the United Nations opened in New York. *Sept. 22*, Dr. Wilder Penfield, Director of the Montreal Neurological Institute and Dr. E. W. R. Steacie, Chairman of the National Research Council, received diplomas of membership in the Academy of Sciences of the U.S.S.R., the first Canadians so honoured. *Sept. 24*, External Affairs Minister Green, head of the Canadian Delegation at the UN General Assembly, presented Canada's views on major world problems, particularly with respect to disarmament and the need for a world program on radiation hazards. *Sept. 26*, Death of A. R. Mosher, Honorary President of the Canadian Labour Congress and chief founder of the Canadian Brotherhood of Railway Employees in 1907.

October: *Oct. 1*, Federal-Provincial Hospital Plan went into effect in Prince Edward Island. *Oct. 5*, John A. MacAulay of Winnipeg elected Chairman of the Board of Governors of the International Red Cross, the first Canadian to be named to the post. *Oct. 6*, Prime Minister Diefenbaker announced grant of $20,000 to the Japanese Red Cross Society for relief of typhoon victims. *Oct. 15-16*, Federal-Provincial Conference held in Ottawa; provincial demands for an immediate increase in tax-sharing payments from the Federal Government rejected. *Oct. 22*, Hearings by the Royal Commission on Transportation began in Quebec City. *Oct. 31*, Canada's largest ice-breaker, *CMS John A. Macdonald*, launched at Lauzon, Que.

November: *Nov. 4*, Alberta Government announced a provincial order banning the use of trading stamps and similar promotional schemes. Agreement on exchange of science experts signed in Moscow by the President of the National Research Council of Canada and the President of the Soviet Academy of Science. *Nov. 6*, Canadian Government announced new program extending to Nov. 30, 1966, the period in which approximately $1,000,000,000 in uranium, undelivered to date under contract, can be produced; this program resulted from the decision of the U.S. Atomic Energy Commission and the U.K. Atomic Energy Authority not to exercise their options to buy beyond Mar. 31, 1963. *Nov. 9*, United Kingdom removed most of the remaining wartime restrictions on foreign imports, except those from Japan and Communist-bloc members; the removal is of special importance to Canadian manufacturers. *Nov. 12*, Douglas J. Mackintosh, Granum, Alta., won title of World Wheat King at Royal Winter Fair, Toronto. *Nov. 16*, Premier Frost of Ontario cut sod for extension of Toronto's subway. *Nov. 17*, Agreement reached with the Soviet bloc on a Canadian proposal for a world-wide study on atomic radiation. *Nov. 18*, Deputy Premier Anastas Mikoyan of U.S.S.R. arrived in Halifax by air for overnight visit en route to Mexico. Polish Legation announced agreement to buy additional wheat and barley on three-year credit terms, bringing total grain purchases from Canada in 1959 to more than $30,000,000. Board of Broadcast Governors announced TV programs must have 45 p.c. Canadian content from Apr. 1, 1961 and 55 p.c. from Apr. 1, 1962. *Nov. 20*, Long-standing problem of federal grants to Quebec universities solved in agreement reached between Federal and Quebec Governments. *Nov. 25*, Prof. Donald C. Creighton, University of Toronto, named member of the Monckton Commission (U.K.) to investigate the constitutional development of the Federation of Rhodesia and Nyasaland. *Nov. 26*, Indians in N.W.T. placed on equal basis with white persons in liquor purchase.

December: *Dec. 2*, Six governors of York University named, marking the official birth of Ontario's tenth university; Dr. Murray G. Ross, Vice-President of the University of Toronto, appointed President on Dec. 3. Ernest L. Bushnell announced resignation as CBC Vice-President. *Dec. 15*, Arrival by air in Toronto of the first group of European tubercular refugees and their families, part of Canada's share in World Refugee Year. *Dec. 16*, Death of J. J. Bowlen. Lieutenant-Governor of Alberta. *Dec. 17*, National Housing Act mortgage interest rate raised to 6¾ p.c. from 6 p.c. *December*, Lieut.-Gen. E. L. M. Burns left command of the UN Emergency Force in the Middle East to serve as Canadian representative on the Ten-Nation Disarmament Committee.

1960

January: *Jan. 1*, Discrimination against dollar imports into Finland ended. Toll charge of $64 introduced for each aircraft flying an international route over Canada to cover cost of providing them with navigational aids. *Jan. 2*, Death of Hon. Jean-Paul Sauvé, Premier of Quebec for 114 days. *Jan. 4*, Willis Rodney Whitney Award presented to Dr. Morris Cohen of the National Research Council by the U.S. National Association of Corrosion Engineers for outstanding scientific achievement in corrosion. *Jan. 5*, Charles F. Comfort, mural painter and Canadian Army artist in the Second World War, named Director of the National Gallery, succeeding Alan Jarvis. *Jan. 7*, Antonio Barrette, former Quebec Labour Minister, became Premier of Quebec. *Jan. 9*, Her Majesty Queen Elizabeth approved appointment of Princess Alexandra of Kent as Colonel-in-Chief of the Queen's Own Rifles of Canada. *Jan. 19*, Announcement made that Canada's second nuclear research centre, to be known as the Whiteshell Nuclear Research Establishment, will be built on the east bank of the Winnipeg

River and 60 miles northeast of Winnipeg. Canada meeting India's request for $25,000,000 worth of Canadian commodities and equipment under the Colombo Plan. *Jan. 21*, Prime Minister Kishi of Japan visited Ottawa; trade relations were the central theme of discussions with Prime Minister Diefenbaker and members of the Cabinet. *Jan. 30*, Discrimination against dollar imports in favour of OEEC countries of Europe ended by Denmark.

February: *Feb. 3*, Announcement that Canada will contribute $25,000,000 toward the building of a transpacific cable as part of a world-girdling Commonwealth communication system. *Feb. 7*, Death of Dr. Robert Hamilton Coats, founder of the Dominion Bureau of Statistics and Dominion Statistician from 1918-42. *Feb. 8*, Federal-provincial conference on centennial celebrations agreed to support an application by the City of Montreal for a World Fair in that area in 1967. Her Majesty Queen Elizabeth announced that future generations of her family, except those in direct line to the Throne, will bear the surname Mountbatten-Windsor. *Feb. 9-10*, A conference between the Federal Government and the British Columbia Government ended in agreement on plans for the development of the Columbia River. *Feb. 17*, New National Gallery of Canada officially opened by Prime Minister Diefenbaker. *Feb. 19*, A second son was born to Her Majesty Queen Elizabeth II and Prince Philip—named on Mar. 22 Prince Andrew Albert Christian Edward. *Feb. 26*, Quebec Legislative Council approved an amendment to a government Bill providing Quebec universities with the means of accepting the $41,000,000 in federal grants being held in trust in Ottawa. Engagement of Her Royal Highness Princess Margaret to Antony Armstrong-Jones announced by Queen Mother Elizabeth. Anne Heggtveit of Ottawa won the women's slalom at Olympic Games in Squaw Valley, California—the first Canadian to win an Olympic gold medal for skiing; the victory also gave her the world combined title and the world slalom title. Barbara Wagner and Bob Paul of Toronto won the Olympic gold medal in pairs competition in figure skating. Donald Jackson of Oshawa won bronze medal for third-place finish in men's figure skating. *Feb. 29-Mar. 2*, Premier Segni of Italy visited Canada.

March: *Mar. 2*, World figure skating championships opened in Vancouver; Barbara Wagner and Bob Paul, Toronto, were pairs title winners for fourth consecutive year. Extension of Federal Government's sponsorship of tubercular refugees beyond the 100 families already brought to Canada announced by External Affairs Minister Green. *Mar. 8*, Four 1959 winners of the Governor General's awards for literature announced by Canada Council—Hugh MacLennan, English fiction; Irving Layton, English poetry; André Giroux, French fiction; and Rt. Rev. Felix-Antoine Savard, French non-fiction. *Mar. 15*, The UN Ten-Nation Disarmament Committee began negotiations. *Mar. 28*, Assent given by the Ontario Legislature for the incorporation of a non-denominational bilingual university at Sudbury to be known as Laurentian University.

April: *Apr. 1*, National Energy Board recommendations for export of natural gas to the U.S. approved by the Federal Government. *Apr. 11*, Death of James Muir, Chairman and President of the Royal Bank of Canada. Canadian newspaperman Norman Phillips, released after detention by police following filing of his news story of racial disturbances in South Africa. *Apr. 18*, President de Gaulle of France, accompanied by Mme de Gaulle, arrived in Ottawa for a four-day state visit to Canada. Canada and the Soviet Union signed a three-year trade agreement under which the U.S.S.R. will spend $2 in Canada for every Canadian dollar spent in Russia, the U.S.S.R. promising to buy $25,000,000 worth of goods every year. *Apr. 21*, Prime Minister Diefenbaker and Mrs. Diefenbaker left Ottawa by air for Mexico City as guests of President and Senora Lopez Mateos. *Apr. 27*, The first Canadian Histadrut Humanitarian Award presented to Claude Jodoin, President of the Canadian Labour Congress. External Affairs Minister Green announced a $15,000,000 Colombo Plan contribution to Pakistan. *Apr. 30*, Hundredth anniversary of the Queen's Own Rifles of Canada.

May: *May 3*, The ninth conference of Commonwealth Prime Ministers opened in London; Canada requested that the Conference consider the possibility of setting up a Colombo Plan for aid to Africa. *May 6*, Her Royal Highness Princess Margaret and Antony Armstrong-Jones married in Westminster Abbey. *May 16*, Big Four Summit Conference opened in Paris. *May. 17*, Summit meeting failed as a result of U-2 aircraft incident. *May 27-28*, His Majesty King Mahendra Bikram Shah Deva of Nepal paid an official visit to Ottawa as part of a North American tour.

June: *June 6*, World Trade Conference opened in Toronto with address by Transport Minister Hees. *June 30*, New Ottawa airport terminal officially opened by Prime Minister Diefenbaker.

July: *July 1*, Belgian Congo became a republic, starting a period of unrest and violence over the withdrawal of Belgian military forces and internal leadership. *July 10*, Roger Woodward, 7, survived 167-foot drop over Niagara Falls after boating accident. *July 11*, The Northwest Territories Council convened at Resolute Bay, the most northerly assembly point for any legislative body in the world. *July 12-13*, Meeting at Ottawa of Canada-United States Cabinet Defense Committee to consider all aspects of North American defence. *July 16*, UN troops arrived in terror-haunted Congo. *July 23*, Her Majesty Queen Elizabeth awarded the Rt. Hon. Vincent Massey, former Canadian Governor General, the Royal Victorian Chain as "a mark of the highest distinction and special favour". *July 25-27*, Federal-Provincial fiscal conference, attended by Premiers of all provinces, set up basis for further discussions on constitutional amendment and tax issues.

August: *Aug. 4*, Bill of Rights approved by House of Commons. Announcement that Her Majesty Queen Elizabeth signed an order formally giving the West Indies Federation full power of home rule beginning Aug. 16. *Aug. 10*, Independent-minded Congo province of Katanga agreed conditionally to admit UN troops. UN Security Council order for immediate replacement of Belgian troops in that area with units from UN forces already in Congo. *Aug. 11*, Establishment of a Medical Research Council similar to the National Research Council and vast expansion of the government's role in medical research approved by the Federal Government. Hazen Argue selected as national leader of the CCF Party. *Aug. 12*, Series of UNESCO conferences on adult education held at Toronto, Montreal, Ste. Agathe and Syracuse, N.Y.; representatives from 60 countries and 20 major international organizations attended. *Aug. 13*, First group of army signallers assigned to UN forces in the Congo left Canada for Leopoldville by air. *Aug. 16*, Cyprus attained independence and became the fourth republic within the Commonwealth. *Aug. 18*, Canadian servicemen manhandled by Congolese troops. Premier Lumumba of Congo apologized for incident Aug. 21. *Aug. 30*, Announcement of a Canadian achievement in the field of atomic energy—creation at Chalk River of a nuclear molecule. *Aug. 31*, Federal conciliation board recommendation of an hourly increase of 14 cents for a two-year contract accepted by representatives of labour unions bargaining for non-operational railway employees.

September: *Sept. 8*, Agreement reached between Federal Government and authorities of Quebec and Ontario for a bridge spanning the Ottawa River to replace the Interprovincial Bridge between Ottawa and Hull. *Sept. 10*, New Halifax International Airport officially opened by Transport Minister Hees. *Sept. 14*, The Second Commonwealth and Empire Law Conference began in Ottawa, with addresses by Justice Minister Fulton and Chief Justice Patrick Kerwin. Former Premier of Quebec, Antonio Barrette, announced his resignation as leader of the Union Nationale party and as member of the Legislature. *Sept. 15*, Maurice (Rocket) Richard, hockey's all-time scoring leader, announced his retirement. *Sept. 16*, A three-man Royal Commission, headed by J. Grant Glassco, Toronto, was appointed to examine all aspects of the Federal Government. A three-man Royal Commission, headed by M. Grattan O'Leary, Ottawa, appointed to inquire into present position and prospects for Canadian magazines and other periodicals. *Sept. 18*, National observance of 20th anniversary of the Battle of Britain held on Parliament Hill. An emergency session of the United Nations General Assembly began; the Congo issue and the policies of Secretary-General Dag Hammarskjold were the main issues. *Sept. 19*, University of Alberta, Calgary, opened on a new 320-acre campus on the outskirts of the city; it is an affiliate of the University of Alberta, Edmonton. *Sept. 20*, The 15th General Assembly of the United Nations opened attended by many heads of government including British Prime Minister Macmillan, United States President Eisenhower, Soviet Premier Khrushchov, Canadian Prime Minister Diefenbaker, Prime Minister Nehru of India, President Nasser of the United Arab Republic, King Hussein of Jordan, President Tito of Yugoslavia, President Sukarno of Indonesia, Prime Minister Menzies of Australia, Prime Minister Nash of New Zealand, Premier Castro of Cuba. Thirteen new Africa countries and Cyprus were admitted to UN membership. *Sept. 20-21*, The Commonwealth Economic Consultative Council met in London; Canadian delegation led by Finance Minister Fleming. *Sept. 21*, Canada will contribute $22,100,000 over a 10-year period to an international fund for the development of the Indus River basin in Pakistan—the largest irrigation scheme yet undertaken by man. *Sept. 23*, Rt. Hon. Vincent Massey, former Governor General of Canada and Chief Scout, laid a commemorative stone at the new Canadian Scout Headquarters in Ottawa. *Sept. 26*, Prime Minister Diefenbaker, in a powerful speech before the United Nations General Assembly, called on Russia to resume negotiations on disarmament and offered proposals to further world peace. *Sept. 28*, New bridge between Prescott, Ont., and Ogdensburg, N.Y., the "Seaway Skyway", officially opened with Governor Rockefeller of New York and Premier Frost of Ontario officiating. *Sept. 29*, Prime Minister Diefenbaker endorsed proposal by Prime Minister Macmillan of the United Kingdom that scientists and technicians meet to lay groundwork for political action on disarmament.

October: *Oct. 1*, The Federation of Nigeria achieved independence and assumed the status of a full member of the Commonwealth; as its independence gift, the Canadian Government made available $10,000 for the purchase of books for a library selected by the Nigerian Government. Opening of O'Keefe Centre for the performing Arts in Toronto. *Oct. 2-6*, The first Canadian Conference on Children held at Ste. Adele. *Oct. 7*, Fifteen Canadian industrialists, headed by Deputy Minister of Trade and Commerce James A. Roberts, left on three-week trade mission to encourage more trade with Europe and to study recent developments in countries of the EEC. South Africans voted in favour of their country becoming a republic and abandoning its status as a constitutional monarchy under the British Crown. *Oct. 7-8*, Federal-Provincial Constitutional Conference of Attorneys-General met in Ottawa to discuss amendment of BNA Act. Nigeria became the 99th member of the UN. *Oct. 11*, Federal Government announced a program to assist low-income families seeking rental housing. External Affairs Minister Green pleaded in the UN Assembly for a return to negotiation on the disarmament problem, touching off a violent speech by Soviet Premier Khrushchov, followed by a crushing defeat of the Soviet proposals and scenes of confusion in the Assembly before adjournment. *Oct. 12*, Announcement that the hitherto unnamed sound between Axel Heiberg and Amund Ringes Islands in the Arctic Archipelago is to be known as Massey Sound after former Governor General Vincent Massey. New highway bridge over the North Saskatchewan River at Prince Albert, built under the federal roads-to-resources program, officially opened by Prime Minister Diefenbaker and Premier Douglas. The first honorary degree presented by Laurentian University of Sudbury conferred on Governor General Vanier. New airport terminal at Regina officially opened. *Oct. 14*, Cuban Government nationalized all but two banks—the Bank of Nova Scotia and the Royal Bank of Canada; Cuban assets of the former were bought by the Cuban Government on Dec. 1 and of the latter on Dec. 8. Announcement of higher import valuations on European cars to yield higher duties and taxes, effective Dec. 1. *Oct. 17*, Mme Vanier made a Dame of Grace in the Order of the Hospital of St. John of Jerusalem at an investiture conducted by her husband, Governor General Vanier. *Oct. 18*, Quebec signed Federal-Provincial Roads-to-Resources Agreement. Canada co-sponsored with Haiti, Liberia, Pakistan, the United States and Venezuela in the UN a plan to channel surplus food to underdeveloped countries through FAO. *Oct. 19-25*, His Highness Tunko Abdul Rahman Putra Al-Haj, Prime Minister of the Federation of Malaya, paid his first visit to Ottawa during which an agreement as to Malaya's share ($2,000,000) of Canada's commitment to the Colombo Plan was approved. *Oct. 20*, Dr. John Bertram Stirling installed as eighth Chancellor of Queen's University. Sir John A. Macdonald Hall, new law school of Queen's University, officially opened by Prime Minister Diefenbaker. *Oct. 24*, In the Montreal municipal election the newly formed Civic Party led by Jean Drapeau won the mayoralty and 44 of the 66 council seats to ensure one-party control of both the council and the seven-man executive committee or cabinet. *Oct. 24*, Prof. Frank A. Forward, head of the Metallurgy Department of the University of British Columbia, given award by the City of Philadelphia for discovery of a new method of extracting nickel and other metals from ore concentrates. *Oct. 24-25*, Conference on unemployment held in Ottawa; leaders of business, industry, farm and labour presented briefs to Prime Minister Diefenbaker and Cabinet committee on unemployment, culminating in approval in principle of the creation of a national productivity council; formation of National Productivity Council approved by Parliament Dec. 20. *Oct. 25*, Eleven persons killed and more than 80 injured in a gas explosion in a Windsor, Ont., department store. *Oct. 26-28*, Federal-Provincial Fiscal Conference held in Ottawa failed to reach agreement on new arrangement to replace the present tax-sharing plan after Mar. 31, 1962. *Oct. 27*, Agreement between Federal and Quebec Governments for construction of Quebec section of the Trans-Canada Highway signed. *Oct. 28*, Banting and Best Department of Medical Research, University of Toronto, received gift of $1,000,000 for medical research from Garfield Weston, Canadian industrialist.

November: *Nov. 2*, Canada's first national theatre school opened in Montreal to 30 students; founder and chairman of the Board is Tom Patterson, founder and director of the Stratford Shakespearean Festival. *Nov. 3-4*, Second Federal-Provincial Constitutional Conference on amendment of the Canadian constitution held in Ottawa; the task of writing a formula for constitutional amendment referred to a committee of law experts representing federal and provincial governments. *Nov. 4*, Seventy-fifth anniversary of the driving of the "last spike" at Craigellachie, B.C., completing the CPR from Montreal to the Pacific Ocean. Fifteen-year program re rehabilitation of inmates in federal prisons announced by Justice Minister Fulton. *Nov. 9*, Ontario Hydro cleared of charges of ineptitude and wrong-doing in the purchase of former Indian land at Sarnia in report released by Mr. Justice G. A. McGillivray, the one-man Royal Commission appointed to investigate the transaction. World championship winners at the Royal Agricultural Winter Fair included Wilbert Suehwold, Mitchellton, Sask. (wheat); George A. Lamb, Cherhill, Alta. (oats); Allie McGaghran, Cobden, Ont. (barley); Irene Bullick, Coronation, Alta. (forage); and Mrs. Walter Chorney, East Selkirk, Man. (potatoes). *Nov. 10*, Announcement of Canadian contribution of $1,000,000 to the UN Fund for the Congo. Deepest well ever drilled in search for oil or gas in Canada (16,540 ft.) completed at Fording Mountain, B.C. *Nov. 14*, Establishment of a Medical Research Council announced by the National Research Council. *Nov. 16*, Fishermen voted to end dispute that shut down the $7,000,000 B.C. herring fishery for a year. *Nov. 17*, John Giles, 18, Glencoe, Ont., won the Queen's Guineas, the top prize for 4-H Club members, for his Aberdeen Angus steer at the Royal Agricultural Winter Fair. Hon. Lester B. Pearson presented with Medallion of Valor of the State of Israel for his "outstanding role in the deliberations of the United Nations which led to the judicious consideration of the differences between the State of Israel and the Arab nations" in his former capacity as External Affairs Minister for Canada. *Nov. 26*, Ottawa Rough Riders won the Grey Cup, defeating the Edmonton Eskimos 16-6 in Empire Stadium, Vancouver. *Nov. 29*, Senator Cairine Wilson, Ottawa, declared woman of the year by B'nai B'rith Women of Toronto. *Nov. 30*, Canadian trade commissioners numbering 110 from all parts of the world met in Ottawa for a 15-day Export Trade Promotion Conference, including meetings with Canadian business men. Alberta community of Lamont stunned by tragic school bus-train collision which killed 16 high school students.

December: *Dec. 1-2*, Interprovincial conference of provincial premiers held in Quebec to consider proposal for national co-operation at the provincial level and establishment of a permanent secretariat. *Dec. 2*, Nation-wide strike of 111,000 non-operating railwaymen averted by Act of Parliament providing for continued railway service until May 15 and freezing current wages; wage increases totalling 14 cents an hour were granted May 15, in line with recommendations of conciliation board. *Dec. 3*, Official opening of Canada's largest civilian airport, the Edmonton International Airport at Nisku. The Netherlands received 17 anti-submarine Tracker aircraft from Canada under NATO mutual-aid program. Canada's 2,000,000th immigrant since 1945 arrived at Quebec. Dr. Charlotte Whitton, former Mayor of Ottawa, returned to office, effective Jan. 1, 1961. *Dec. 6*, Death of Hon. Louis O. Breithaupt, former Lieutenant-Governor of Ontario. *Dec. 7*, Announcement that Canadian-developed metallurgical process for using uranium as an alloy in strengthening steel now available to steel industry. *Dec. 9*, Death of M. M. Walter, Chairman and President of the Royal Bank of Canada. *Dec. 14*, Legislation making automatic the retirement of Superior and Supreme Court judges at age 75 passed, effective March 1961. Twenty nations, including Canada, signed new trade agreement setting up the Organization for Economic Co-operation and Development (replacing OEEC) for the purpose of co-operation, expanded aid to underdeveloped countries and generally expanded trade. Ottawa University announced plans for $31,500,000 expansion program, to include a $7,000,000 hospital. *Dec. 15*, Montreal's new $30,000,000 International Air Terminal at Dorval officially opened by Transport Minister Balcer. *Dec. 17*, Legality of trading stamps upheld by Supreme Court. Quebec became 10th province to join the National Hospital Insurance Plan, effective Jan. 1, 1961. W. Earle McLaughlin became President of the Royal Bank of Canada. *Dec. 19*, Permission to use the prefix "Royal" before the name "Canadian Legion" granted by Her Majesty Queen Elizabeth II. *Dec. 21*, Foreign Ministers of the United Kingdom, the United States, France, Italy and Canada met to discuss arrangements for convening the Ten-Nation Disarmament Committee. Announcement of establishment of federal Royal Commission to study health needs and resources of Canada and recommend methods of ensuring a high standard of health. *Dec. 26-31*, First session of National Youth Orchestra Association of Canada met in Toronto, concluding with a public concert in Massey Hall. *Dec. 30*, Four radio engineers of the National Research Council awarded the 1959 Brabazon Award by the British Institution of Radio Engineers for developing an electronic aid to aircraft search and rescue, the first such award given outside the U.K. Dr. Charlotte Whitton, Mayor-Elect of Ottawa, chosen woman of the year for the fourth time in a poll conducted by the Canadian Press. Death of the Rt. Hon. C. D. Howe, former M.P. and Cabinet Minister from 1935-56.

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January: *Jan. 2*, Remainder of Polish treasures, stored in Quebec Provincial Museum since September 1939, left Canada on return journey, arriving in Gdynia, Poland, Jan. 17. *Jan. 3*, Formal termination of U.S. diplomatic and consular relations with Cuba; Canada's relations to continue. *Jan. 9-11*, National rally of Liberal Party held in Ottawa; 2,000 delegates attended. *Jan. 12-13*, Third Federal-Provincial Constitutional Conference reached general agreement with respect to amendment of BNA Act. *Jan. 16*, Canada-India nuclear plant, a gift to India by Canada under the Colombo Plan, formally opened. *Jan. 17*, Columbia River Treaty signed in Washington by Prime Minister Diefenbaker and President Eisenhower. *Jan. 20*, John Fitzgerald Kennedy inaugurated as President of the United States of America. *Jan. 27*, The City of Montreal given authority by the Quebec Government to proceed with construction of a subway; cost is estimated at about $300,000,000. Governor General Vanier, Canada's Chief Scout, officially opened the new national headquarters of the Boy Scouts of Canada in Ottawa. *Jan. 31*, Iranian Deputy Prime Minister Teymour Bakhtiar met with Prime Minister Diefenbaker and External Affairs Minister Green for informal discussions in Ottawa.

February: *Feb. 2*, Announcement of sale of 40,000,000 bu. of grain to Red China for $60,000,000. *Feb. 3*, Federal Government approval of the merger of the Canadian Bank of Commerce and the Imperial Bank of Canada, to be known as the Canadian Imperial Bank of Commerce. *Feb. 4*, Ottawa land-mark, 86-year-old Dominion United Church, razed by fire. *Feb. 10*, Frank Howard, M.P., 'named' in a vote of 149-7 and suspended from the House of Commons for one day. Mrs. Gladys Porter seconded the Speech from the Throne in the Nova Scotia Legislature, the first woman to do so in its 203-year history. *Feb. 14*, Russia withdrew recognition of Dag Hammarskjold as Secretary-General of the UN following the slaying of Congolese Premier Lumumba. *Feb. 16*, The 1961 World Figure Skating Championships cancelled following the tragic 'plane crash near Brussels in which the entire U.S. figure skating team and its coach lost their lives. *Feb. 20*, Prime Minister Diefenbaker held brief talks with President Kennedy in Washington on international matters. Death in Saskatoon of Mrs. Mary Florence Diefenbaker, mother of Prime Minister Diefenbaker. Announcement of federal plan to conduct aeromagnetic surveys to pinpoint mineral wealth of the Canadian Shield; $18,000,000 to be spent by the federal and provincial governments over the next 12 years. *Feb. 21*, An Ontario Royal Commission report tabled in the Legislature endorsed fluoridation of water to reduce dental decay and recommended project assistance be given to municipalities. *Feb. 22-26*, Fourth meeting of the Canada–United States Interparliamentary Group at Ottawa and Quebec to discuss matters of common interest including defence, trade, boundary matters, cultural relations and foreign policy. *Feb. 23-24*, Federal-Provincial Fiscal Conference held in continuation of talks seeking agreement on new tax-sharing policy. *Feb. 25*, Winners of the Governor General's Literary Awards for 1960 were announced: Brian Moore (fiction); Margaret Avison (poetry); Frank Underhill (non-fiction); Anne Hébert (poetry in French); and Paul Toupin (non-fiction in French). Maria and Otto Jelinek, Oakville, Ont., won the "pairs" North American free-skating title at Philadelphia.

March: *Mar. 1*, A three-man trade mission left for Hong Kong to discuss problems concerning imports. *Mar. 2*, Dr. R. T. Coupland, Department of Plant Ecology, University of Saskatchewan, appointed to study grassland vegetation in the U.S.S.R. as part of a scientific exchange between Canada and the Soviet Union. Eighty-five scientists from the ten provinces and the Yukon Territory met in Ottawa for a week-long discussion on agricultural research, the first meeting of its kind. *Mar. 4-7*, Prime Minister Diefenbaker visited Belfast, Northern Ireland, and Dublin, Ireland, the first visit to these cities by a Canadian Prime Minister while in office. *Mar. 8-17*, Annual Conference of Commonwealth Prime Ministers held in London, Canada's Prime Minister attending accompanied by Secretary of State Dorion and Justice Minister Fulton; the South African policy of apartheid was censured by Prime Minister Diefenbaker, strongly supported by leaders of Ghana, Malaya, India and Ceylon; South Africa's decision to quit the Commonwealth on May 31 resulted. *Mar. 7*, Fifteenth session of the UN Assembly resumed, attended by the largest gathering of representatives (99 member states sent delegations) and faced with the heaviest agenda in its history. *Mar. 7*, Earl Mountbatten of Burma, Chief of the U.K. defence staff, arrived in Ottawa for discussions with Defence Minister Harkness and Canadian Chiefs-of-Staff. *Mar. 10*, Centennial of the birth of Canadian poet E. Pauline Johnson. *Mar. 13*, Major General Jean Victor Allard became the first Canadian officer to be named to command a British Army Division. *Mar. 14*, Establishment of a graduate students' centre at the Universtiy of Toronto, to be known as Massey College, a gift of the Massey Foundation. *Mar. 15*, Livingston T. Merchant re-appointed United States Ambassador to Canada. *Mar. 16*, Bernard (Boom Boom) Geoffrion scored his 50th goal, tying the National Hockey League one-season record set by Maurice (Rocket) Richard. *Mar. 16-18*, Annual meeting of the national Progressive Conservative Association held in Ottawa. *Mar. 26-27*, State of emergency declared in Prince Edward Island following a severe snowstorm. *Mar. 29*, France informed UN that it would not pay any part of the costs of military operations in the Congo; U.K. and Canada undertook to pay all commitments to alleviate the financial crisis. Dr. J. M. Harrison, Director of the Geological Survey of Canada, elected President of the newly formed International Union of Geological Sciences in Paris.

April: *Apr. 5*, Report of the Royal Commission on Transportation tabled, recommending that the Federal Government pay the two major railways annual subsidies of about $40,000,000 and allow them greater leeway in abandoning uneconomic services. *Apr. 6*, A cheque for $260,000, representing money collected by the children of Canada, presented to UNICEF. *Apr. 7*, Death of Jackson Dodds, former joint General Manager of the Bank of Montreal and Honorary President of the National Council, Boy Scouts of Canada. *Apr. 9-10*, United Kingdom Prime Minister Macmillan, accompanied by his wife, Lady Dorothy, visited Ottawa for discussions with Prime Minister Diefenbaker and the Canadian Cabinet. *Apr. 12*, First flight of man into space accomplished by Yuri Gagarin, Soviet Air Force Pilot; flight lasted one hour and 40 minutes. *Apr. 13-15*, His Excellency Constantin Caramanlis, Prime Minister of Greece, accompanied by Mrs. Caramanlis, made official visit to Ottawa. *Apr. 15*, Air Marshal W. A. Curtis elected first Chancellor of York University, Toronto. The Canadian section of the Seafarers' International Union of North America established its independence of the parent U.S. organization and became known as the Seafarers' International Union of Canada. The Chicago Black Hawks won the Stanley Cup, symbol of hockey supremacy. *Apr. 19*, K. Sankara Pillai, First Secretary, Indian High Commissioner's Office, Ottawa, slain in his office by an intruder. *Apr. 21*, Death of Victor Sifton, editor and publisher of the Winnipeg Free Press. *Apr. 25*, Dr. Michael W. Partington, Toronto Hospital for Sick Children, named first "Queen Elizabeth II Scientist", the highest award for research by the Queen Elizabeth II Canadian Fund set up by the Federal Government in 1959 to mark the Queen's visit to Canada. *Apr. 27*, Sierra Leone ceased to be a British Colony and joined the Commonwealth as a sovereign independent nation; a $5,000 book credit established as Canada's independence gift.

May: *May 1-2*, His Excellency Habib Bourguiba, Sr., President of Tunisia, on state visit to Ottawa. *May 2*, New flagship of the Canadian Pacific fleet *Empress of Canada*, the largest passenger ship ever to come to Montreal, arrived after her maiden voyage. *May 3*, The Federal Government concluded agreement with Red China for sales of grain amounting to $362,000,000, one of the largest transactions of its kind ever made. *May 4*, The *Federal Maple*, first of two passenger-cargo ships presented by Canada to the Federation of the West Indies under the Canada-West Indies Aid Programme, launched. U.S. Astronaut Alan B. Shepard carried 115 miles into space and successfully returned to earth. *May 13*, Transport Minister Balcer announced new shipping policy featuring the subsidizing of Canadian shipyards and the reservation for Canadian vessels of the coasting trade in the Great Lakes. *May 16-18*, U.S. President Kennedy and Mrs. Kennedy on state visit to Ottawa. *May 24-27*, Prime Minister David Ben-Gurion of Israel on official visit to Canada. *May 28*, Swiftsure Lightship trophy won by Bonar Davis in Ches Rickard's *Winsome III*, first Canadian victory in 30-year history of the race held annually off Victoria. *May 29*, Viscount Amory appointed United Kingdom High Commissioner to Canada, succeeding Sir Saville Garner. *May 31*, South Africa became a republic outside the British Commonwealth.

June: *June 1*, Canada's tenth decennial Census begun. *June 5*, "Earnscliffe", once the home of Sir John A. Macdonald and now the residence of the United Kingdom High Commissioner to Canada, officially marked as a national historic site. *June 6*, Royal Society of Canada medals awarded to Gérard Malchelosse, Montreal, Que.; Robertson Davies, Peterborough, Ont.; R. M. Petrie, Royal Oak, B.C.; Guy Frégault, Ottawa University; W. H. White, University of British Columbia; and C. P. Leblond, McGill University. *June 12*, Announcement of agreement between the Canadian Government and the U.S. Government to strengthen the North American region of the North Atlantic Alliance by Canada receiving 66 F-101B U.S.-made *Voodoo* jet interceptor aircraft in exchange for assuming operational and maintenance responsibilities of the Pinetree Line; both governments also agreed upon a joint Mutual Aid program providing for the procurement of 200 F-104G *Starfighter* jet aircraft from Canadian sources. *June 12-24*, Governor General Vanier and Mrs. Vanier on 6,000-mile tour of the Northwest Territories. *June 13*, Expropriations by the National Capital Commission completed for the 41,000-acre Green Belt surrounding Ottawa. *June 13-July 14*, Bitter controversy between Bank of Canada Governor James E. Coyne and the Federal Cabinet over fiscal and monetary policy, involving the appearance of Mr. Coyne before a Senate Committee and Senate rejection of a Government Bill to declare the position of Governor vacant, and culminating in resignation of Mr. Coyne. *June 15*, Report of the Royal Commission on Publications tabled in the House of Commons. *June 23*, Three thousand persons removed from their homes along Bonavista Bay, Nfld., to escape raging forest fires. *June 25*, Death of Hon. J. A. D. McCurdy, former Lieutenant-Governor of Nova Scotia and the first man in the Commonwealth to pilot a powered aircraft. *June 25-26*, Prime Minister Hyato Ikeda of Japan visited Ottawa. *June 26*, Upper Canada Village in Crysler Farm Battlefield Park, part of the Bay of Quinte–St. Lawrence Parks System, officially opened by Premier Frost of Ontario. *June 28*, Aid to prairie farmers in drought crisis announced by Prime Minister Diefenbaker.

July: *July 6*, Robert N. Thompson, Red Deer, Alta., elected national leader of the Social Credit Party of Canada, succeeding Solon Low, at the Party national convention held in Ottawa. *July 13*, Rt. Hon. Duncan Sandys, Secretary of State for Commonwealth Relations, United Kingdom, met Canadian Cabinet Ministers in Ottawa for talks *re* the U.K.'s possible entry into the European Common Market. *July 12*, Death of Mazo de la Roche, Canadian writer and author of the Jalna series of books. *July 13*, Roy Thomson, newspaper publisher, appointed Chancellor of Memorial University of Newfoundland. *July 21*, Prime Minister Diefenbaker officially opened the $34,000,000 government-built Arctic town of Inuvik. U.S. Astronaut Virgil I. Grissom successfully rocketed 118 miles into space at 5,280 mph. WO2 Norman Beckett, Ancaster, Ont., won the Queen's Prize for marksmanship at Bisley, England. *July 22*, New $25,000,000 Northwest Telecommunications System microwave network, the largest single microwave project in Canada, inaugurated at Whitehorse, Y.T., by Prime Minister Diefenbaker. *July 24*, Louis Rasminsky appointed Governor of the Bank of Canada.

August: *Aug. 2*, Hon. Leslie Frost, Premier of Ontario for 12 years, announced his resignation as leader of the Ontario Progressive Conservative Party. *Aug. 3*, Premier Thomas Clement Douglas of Saskatchewan elected national leader of the newly formed New Democratic Party at Ottawa-held convention. The British Columbia Government approved the taking over of the British Columbia Electric Company as a Crown corporation. Dr. W. G. Schneider, National Research Council, awarded the Chemical Institute of Canada Palladium Medal for outstanding contributions to Canadian chemistry. *Aug. 7*, Major Gherman S. Titov, Soviet astronaut, successfully completed space flight which carried him 17 times around the earth in 25 hours and 18 minutes. Bob Hayward in *Miss Supertest III* won the Harmsworth Trophy for Canada for the third successive year, setting a world record of 126.22 mph. for unlimited class hydroplanes. *Aug. 14-15*, Second conference of provincial premiers held at Charlottetown, P.E.I.

PART VI.—STATISTICAL SUMMARY OF THE PROGRESS OF CANADA 1871-1960

Newfoundland entered Confederation in 1949 and figures for that province are included with Canadian statistics as they have become available. Under each item in the following Summary the inclusion of Newfoundland data for the first time is indicated by a black dot(•). If no dot is shown on any of the years from 1951-60 for a particular item, Newfoundland is excluded throughout. In some instances the symbol does not apply. Revisions of figures published in previous editions of the Year Book are not indicated in this Summary.

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA

NOTE.—*The interpretation of the symbols used in this table will be found facing p. 1 of this volume.*

	Item		1871	1881	1891	1901	1911	1921
	Population—[1]							
1	Newfoundland	No.	...	...	...	...	...	...
2	Prince Edward Island	"	94,021	108,891	109,078	103,259	93,728	88,615
3	Nova Scotia	"	387,800	440,572	450,396	459,574	492,338	523,837
4	New Brunswick	"	285,594	321,233	321,263	331,120	351,889	387,876
5	Quebec	"	1,191,516	1,359,027	1,488,535	1,648,898	2,005,776	2,360,510
6	Ontario	"	1,620,851	1,926,922	2,114,321	2,182,947	2,527,292	2,933,662
7	Manitoba	"	25,228	62,260	152,506	255,211	461,394	610,118
8	Saskatchewan	"	..	..	..	91,279	492,432	757,510
9	Alberta	"	..	..	..	73,022	374,295	588,454
10	British Columbia	"	36,247	49,459	98,173	178,657	392,480	524,582
11	Yukon Territory	"	..	..	..	27,219	8,512	4,157
12	Northwest Territories	"	48,000	56,446	98,967	20,129	6,507	8,143
	Canada	No.	3,689,257	4,324,810	4,833,239	5,371,315	7,206,643	8,787,949[2]
13	**Households** (excl. Territories)	No.	..	800,410	900,080	1,058,386	1,482,980	1,897,110
	Immigration—							
14	From United Kingdom	No.	..	17,033	22,042	11,810[4]	144,076	43,772
15	From United States	"	..	21,822	52,516	17,987[4]	112,028	23,888
16	From other countries	"	..	9,136	7,607	19,352[4]	75,184	24,068
	Totals, Immigration	No.	27,773	47,991	82,165	49,149[4]	331,288	91,728
	Vital Statistics—							
17	Births (live)	No.	..	..	..	..	..	264,879●[5]
	Rates per 1,000 population		..	..	..	..	..	29.3●[5]
18	Deaths, all causes	No.	..	..	..	..	..	104,531●[5]
	Rates per 1,000 population		..	..	..	..	..	11.6●[5]
19	Marriages	No.	..	..	..	..	..	71,254●[5]
	Rates per 1,000 population		..	..	..	..	..	7.9●[5]
20	Divorces	No.	4	7	10	19	57	558
	Health and Welfare—							
	PUBLIC HOSPITALS—							
21	Hospitals[6]	No.	..	..	..	..	..	..
22	Bed capacity[7]	"	..	..	..	..	..	..
23	Patient days[8]	"	..	..	..	..	..	..
24	Expenditure (net)[9]	$	..	..	..	..	..	..
	Tuberculosis Sanatoria—[6]							
25	Sanatoria	No.	..	..	..	..	..	..
26	Bed capacity	"	..	..	..	..	..	..
27	Patient days	"	..	..	..	..	..	..
28	Expenditure (net)[9]	$	..	..	..	..	..	..
	Mental Institutions—							
29	Hospitals	No.	..	..	..	..	..	..
30	Bed capacity	"	..	..	..	..	..	..
31	Patient days	"	..	..	..	..	..	..
32	Expenditure (net)[9]	$	..	..	..	..	..	..
33	FAMILY ALLOWANCES[4]	$	..	..	..	..	..	..
34	OLD AGE SECURITY[4]	$	..	..	..	..	..	..
35	ALLOWANCES FOR THE BLIND[4,13]	$	..	..	..	..	..	..
36	UNEMPLOYMENT INSURANCE PAID[4, 14]	$	..	..	..	..	..	..
	Criminal Statistics—[15]							
37	Convictions, indictable offences	No.	..	3,509[16]	3,974	5,638	12,627	19,396
	Convictions, offences punishable on summary conviction—							
38	Relating to traffic and parking regulations	No.	..	30,365[16]	33,643	36,510	100,633	51,843
39	Other	"						105,934

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[1] At every census the previous post-censal estimates made at June 1 each year are adjusted to the newly recorded population figures. [2] Includes 485 members of the Royal Canadian Navy recorded separately. [3] Intercensal estimate—excludes households in institutions. [4] Year ended Mar. 31. [5] Excludes the Territories. [6] Reporting public hospitals only; private and federal hospitals excluded. [7] Bassinets for

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

NOTE.—*The interpretation of the symbols used in this table will be found facing p. 1 of this volume.*

1931	1941	1951	1957	1958	1959	1960	
...	...	361,416	426,000	438,000	449,000	459,000	**1**
88,038	95,047	98,429	99,000	100,000	102,000	103,000	**2**
512,846	577,962	642,584	702,000	710,000	716,000	723,000	**3**
408,219	457,401	515,697	565,000	577,000	590,000	600,000	**4**
2,874,662	3,331,882	4,055,681	4,758,000	4,884,000	4,999,000	5,106,000	**5**
3,431,683	3,787,655	4,597,542	5,622,000	5,803,000	5,952,000	6,089,000	**6**
700,139	729,744	776,541	860,000	870,000	885,000	899,000	**7**
921,785	895,992	831,728	879,000	888,000	902,000	910,000	**8**
731,605	796,169	939,501	1,160,000	1,201,000	1,243,000	1,283,000	**9**
694,263	817,861	1,165,210	1,487,000	1,544,000	1,570,000	1,606,000	**10**
4,230	4,914	9,096	12,000	13,000	13,000	14,000	**11**
9,316	12,028	16,004	19,000	20,000	21,000	22,000	**12**
10,376,786	11,506,655	14,009,429 ●	16,589,000	17,048,000	17,442,000	17,814,000	
2,275,171	2,706,089	3,420,822 ●	4,112,000[3]	4,234,000[3]	4,366,000[3]	4,468,000[3]	**13**
7,678	435	31,559	108,989	24,777	18,222	19,585	**14**
15,195	6,594	7,755	11,008	10,846	11,338	11,247	**15**
4,657	2,300	155,077	162,167	89,228	77,368	73,279	**16**
27,530	9,329	194,391	282,164	124,851	106,928	104,111	
247,205	263,993	381,092	469,093	470,118	479,275	478,551	**17**
23.2	22.4	27.2	28.3	27.6	27.5	26.9	
108,446	118,797	125,823	136,579	135,201	139,913	139,693	**18**
10.2	10.1	9.0	8.2	7.9	8.0	7.8	
68,239	124,644	128,408	133,186	131,525	132,474	130,339p	**19**
6.4	10.6	9.2	8.0	7.7	7.6	7.3	
700	2,462	5,270 ●	6,688	6,279	6,542	6,870p	**20**
587	610	778	894 ●	922	940	..	**21**
43,247	53,305	68,674	88,158 ●	93,271	97,610	..	**22**
9,657,517	12,926,043	19,798,448	25,794,298 ●	27,270,087	28,668,039	..	**23**
38,309,400	..	196,203,373	393,400,881 ●	444,160,613	510,182,949	..	**24**
31	39	59 ●	54	52	50	52	**25**
6,044	8,655	13,502 ●	13,220	12,031	11,087	10,466	**26**
1,924,289	3,227,640	4,640,217 ●	3,887,198	3,413,428	3,131,830	2,916,932	**27**
5,329,393	7,753,229	26,815,147 ●	32,189,682	30,410,121	29,607,096	..	**28**
52	54	63 ●	72	71	69	65	**29**
29,283	38,800	44,205 ●	54,367	57,032	59,022	58,733[10]	**30**
10,662,343	16,078,250	19,708,905 ●	23,393,648	23,942,562	23,789,871	23,562,975[10]	**31**
13,235,767	14,725,760	46,403,522 ●	85,301,953	96,326,928	89,922,760[11]	..	**32**
..	..	309,465,461 ●	397,517,840	437,886,560	474,787,068	491,214,359	**33**
7,050,924[12]	28,472,475[12]	99,268,006[12] ●	379,111,374	473,859,103	559,279,858	574,887,046	**34**
..	1,067,239	3,901,109 ●	2,959,526	3,575,724	4,235,131	4,197,087	**35**
..	..	88,273,000 ●	231,296,000	385,076,000	478,631,000	415,234,000	**36**
31,542	42,646	40,289 ●	54,900	62,839	56,204	..	**37**
212,361	369,234	1,065,426 ●	2,168,181	2,209,746	2,255,300	..	**38**
115,417	178,322	243,040 ●	298,581	299,230	293,609	..	**39**

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newborn excluded. [8] Days' stay of newborn excluded. [9] Not all hospitals shown above furnished financial reports. [10] Excludes one institution in Alberta. [11] Excludes 12 institutions in Quebec. [12] Provinces contributed prior to 1952 but their contributions are not included. [13] Federal contribution only. [14] Includes seasonal benefit payments from 1950. [15] Years ended Sept. 30 prior to 1950; 1950 and subsequently, years ended Dec. 31. [16] 1886 figures; first year available.

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

	Item		1871	1881	1891	1901	1911	1921
	Education—							
1	Total enrolment, all types.....	No.	803,000	891,000	993,000	1,092,633	1,361,205	1,880,805
2	Teachers[1].....................	"	13,559	18,016	23,718	27,126	40,516	56,607
3	Expenditure on...............	$'000	..	..	..	11,045	37,971	112,977
	Survey of Production—							
4	Net value....................	$'000	..	..	..	..	..	..
	Agriculture—							
5	Area of occupied farms....	'000 acres	36,046	45,358	58,998	63,422	108,969	140,888
6	Improved lands...........	"	17,336	21,899	27,730	30,166	48,734	70,770
7	Cash income from the sale of farm products..............	$'000	..	..	..	..	..	..
	Field Crops—[4]							
8	Wheat......................	'000 bu.	16,724	32,350	42,145	55,572	132,078	226,508
		$'000	16,993	38,820	31,668	36,122	104,817	374,179
9	Oats.......................	'000 bu.	42,489	70,493	83,428	151,497	245,393	364,989
		$'000	15,966	23,968	31,703	51,509	86,796	180,990
10	Barley.....................	'000 bu.	11,496	16,845	17,223	22,224	28,848	42,956
		$'000	8,171	11,791	8,611	8,890	14,654	33,514
11	Corn.......................	'000 bu.	3,803	9,025	10,711	25,876	14,418	10,822
		$'000	2,283	5,415	5,034	11,903	5,774	7,081
12	Potatoes...................	'000 cwt.	28,398	33,221	32,095	33,218	33,277	37,338
		$'000	15,212	13,289	21,396	13,841	27,427	44,636
13	Tame hay.................	'000 ton	3,819	5,056	7,694	6,944	10,406	8,830
		$'000	38,870	40,446	69,244	85,625	90,116	174,110
	Totals, Field Crops[6]....	'000 acres	..	..	15,663	19,734	30,556	47,553
		$'000	111,117	155,277	194,767	237,682	384,514	933,046
	Livestock and Poultry—[7]							
14	Horses........................	'000	837	1,059	1,471	1,578	2,599	3,452
		$'000	..	..	..	118,279	381,916	414,808
15	Milk cows....................	'000	1,251	1,596	1,857	2,409	2,645	3,087
		$'000	..	..	..	69,238	111,833	188,518
16	Other cattle..................	'000	1,373	1,919	2,264	3,168	3,881	5,283
		$'000	..	..	..	54,197	84,021	146,567
17	Sheep........................	'000	3,156	3,049	2,564	2,510	2,174	3,201
		$'000	..	..	..	10,491	10,702	20,675
18	Swine........................	'000	1,366	1,208	1,734	2,354	3,635	3,324
		$'000	..	..	..	16,446	26,987	35,869
19	All poultry....................	'000	..	..	14,105	17,923	31,793	37,186
		$'000	..	..	..	5,724	14,654	38,015
	Totals, Livestock and Poultry..................	$'000	..	..	..	274,375	630,113	844,452
	Dairying—[8]							
20	Total milk production.......	'000 lb.	..	..	..	6,866,834	9,806,741	11,897,545
21	Farm value of total milk production......................	$'000	..	..	..	66,471	103,382	161,829
	Forestry—							
22	Primary forest production.....	$'000	..	..	..	..	..	168,054
23	Lumber production......	M ft. b.m.	..	..	..	..	4,918,202	2,869,307
		$'000	..	..	..	..	75,831	82,449
24	Total sawmill products........	$'000	..	..	..	..	..	116,891
25	Pulp and paper products.......	$'000	..	..	..	..	..	151,003
26	Exports of wood, wood products and paper[10].................	$'000	..	..	25,351	33,100	56,335	284,561

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[1] Up to 1941 includes teachers in provincially controlled ordinary and technical day schools only; subsequently all teachers. [2] Estimated. [3] Includes the Yukon and Northwest Territories. [4] Figures for the decennial census years 1871-1921 are for the immediately preceding years; those for 1871 are for the four original

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

1931	1941	1951	1957	1958	1959	1960	
2,264,106	2,131,391	2,922,931 ●	3,945,299	4,122,427	4,529,909	4,751,017	1
71,246	75,308	105,796 ●	151,839	155,182	158,075	164,843	2
144,749	129,817	524,033 ●	960,000[2]	1,185,600[2]	1,338,000[2]	1,442,000[2]	3
..	4,572,505	13,169,417 ●	17,919,713	18,073,718	18,827,759	..	4
163,114	173,563	174,047[3] ●	..	..	..	..	5
85,732	91,636	96,853[3] ●	..	..	..	..	6
471,913	880,849	2,782,750	2,573,341	2,794,615	2,789,348	2,782,953	7
312,325	314,710	553,678	385,508	371,730	413,520	489,624	8
123,550	192,642	856,785	493,491	492,198	545,606	565,793[5]	
328,278	306,052	493,886	380,599	400,951	417,933	456,134	9
77,970	125,657	374,941	226,811	252,584	285,160	255,409[5]	
67,383	110,401	245,435	215,993	244,764	225,550	207,036	10
17,465	47,296	270,237	165,051	187,491	167,775	148,384[5]	
5,449	13,672	15,900	29,613	29,892	31,023	29,337	11
2,274	9,868	28,500	34,950	36,155	35,932	33,412	
52,305	37,039	29,928	44,077	40,301	36,532	43,790	12
22,359	46,234	101,189	76,302	69,573	101,124	93,037	
14,540	14,448	20,190	19,188	18,029	20,246	21,762	13
110,110	178,638	307,118	295,177	282,558	304,244	317,845	
58,862	55,103	60,835	60,302	60,118	60,766	61,101	
435,966	678,899	2,140,631	1,456,452	1,520,371	1,626,679	1,605,004[6]	
3,114	2,789	1,304	730	675	614	572	14
205,087	184,550	94,132	74,657	75,363	75,880	76,662	
3,372	3,626	2,973	3,147	3,129	3,108	3,162	15
160,655	191,214	741,356	452,196	572,927	624,929	628,314	
4,601	4,891	5,390	8,149	7,872	8,012	8,339	16
94,952	138,196	852,236	716,689	882,975	975,418	950,034	
3.627	2,840	1,461	1,661	1,713	1,761	1,773	17
19,680	17,039	38,267	27,653	30,667	28,532	27,941	
4,700	6,081	4,914	4,857	6,164	6,872	5,483	18
33,288	54,912	185,395	153,791	213,261	179,298	135,617	
65,468	63,526	64,541	77,168	82,624	81,785	75,649	19
45,138	27,444	84,010	79,021	90,051	87,725	78,047	
558,800	613,354	1,995,396	1,504,007	1,865,244	1,971,782	1,896,615	
14,339,686	16,068,037	15,309,971	17,306,028	18,053,883	18,186,737	18,433,320	20
139,769	205,278	465,270	532,110	571,840	594,736	598,822	21
141,124	225,616	821,022 ●	823,054	638,611	715,716	..	22
2,497,553	4,941,084	6,948,697 ●	7,099,758	7,179,080	7,591,419	..	23
45,978	129,288	507,650 ●	466,228	459,901	490,540	..	
62,769	163,412	591,552 ●	555,688	546,299	571,823	..	24
174,734	334,726	1,237,897 ●	1,411,934[9]	1,394,679[9]	1,499,585[9]	..	25
185,493	387,113	1,399,076 ●	1,456,125	1,413,989	1,518,447	..	26

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provinces only.

[5] Preliminary. Does not include Canadian Wheat Board interim and final payments.

[6] Includes other field crops, e.g., rye and flaxseed, not specified.

[7] On farms only.

[8] Figures for the decennial census years 1901-1911 are for the immediately preceding years.

[9] Value of factory shipments.

[10] Years ended Mar. 31 prior to 1931.

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

	Item		1871	1881	1891	1901	1911	1921
	Mineral Production—							
1	Gold	oz. t.	105,187	63,524	45,018	1,167,216	473,159	926,329
		$	2,174,412	1,313,153	930,614	24,128,503	9,781,077	19,148,920
2	Silver	oz. t.	..	355,083[1]	414,523	5,539,192	32,559,044	13,543,198
		$	..	347,271[1]	409,549	3,265,354	17,355,272	8,485,355
3	Copper	lb.	..	3,260,424[1]	9,529,401	37,827,019	55,648,011	47,620,820
		$	..	366,798[1]	1,226,703	6,096,581	6,886,998	5,953,555
4	Lead	lb.	..	204,800[1]	88,665	51,900,958	23,784,969	66,679,592
		$	..	9,216[1]	3,857	2,249,387	827,717	3,828,742
5	Zinc	lb.	..	..	..	788,000[2]	1,877,479	53,089,356
		$	..	..	..	36,011[2]	108,105	2,471,310
6	Nickel	lb.	..	830,477[3]	4,035,347	9,189,047	34,098,744	19,293,060
		$	..	498,286[3]	2,421,208	4,594,523	10,229,623	6,752,571
7	Coal	ton	1,063,742[4]	1,537,106	3,577,749	6,486,325	11,323,388	15,057,493
		$	1,763,423[4]	2,688,621	7,019,425	12,699,243	26,467,646	72,451,656
8	Natural gas	M cu. ft.	..	..	..	..	..	14,077,601
		$	..	..	150,000[5]	339,476	1,917,678	4,594,164
9	Petroleum, crude	bbl.	..	368,987	755,298	622,392	291,092	187,541
		$	..	..	1,010,211	1,008,275	357,073	641,533
10	Asbestos	ton	..	..	9,279	40,217	127,414	92,761
		$	..	..	999,878	1,259,759	2,943,108	4,906,230
11	Cement[6]	bbl.	..	69,843[1]	93,479	450,394	5,692,915	5,752,885
		$	..	81,909[1]	108,561	660,030	7,644,537	14,195,143
	Totals, Mineral Production[7]	$	..	10,221,255[7]	18,976,616	65,797,911	103,220,994	171,923,342[6]
	Electric Power Statistics—[8]							
12	Generating capacity[9]	'000	..	..	..	..	..	1,845
13	Power generated	'000 kwh.	..	..	..	..	..	5,614,132
14	Customers	No.	..	..	..	..	..	973,212
15	Revenue (in Canada)	$'000	..	..	..	..	..	58,292
	Fisheries—							
16	Marketed value of all products	$	7,573,199	15,817,162	18,977,874	25,737,153	34,667,872	34,931,935
	Furs—							
17	Pelts taken[12]	No.	..	..	..	..	..	2,936,407
		$	..	..	..	..	..	10,151,594
18	Value of animals on fur farms	$	..	..	..	..	..	5,977,545
	Manufactures—							
19	Employees	No.	187,942	254,935	369,595	339,173	515,203	438,555
20	Capital	$	77,964,020	165,302,623	353,213,000	446,916,487	1,247,583,609	2,697,858,073
21	Salaries and wages	$	40,851,009	59,429,002	100,415,350	113,249,350	241,008,416	497,299,761
22	Values of materials used in	$	124,907,846	179,918,593	250,759,292	266,527,858	601,509,018	1,365,292,885
	Products—							
23	Gross[13]	$	221,617,773	309,676,068	469,847,886	481,053,375	1,165,975,639	2,488,987,148
24	Net	$	96,709,927	129,757,475	219,088,594	214,525,517	564,466,621	1,123,694,263
	Index of Industrial Production— (1949=100)							
25	Total industrial production		..	..	..	..	..	..
26	Mining		..	..	..	..	..	..
27	Manufacturing		..	..	..	..	..	..
28	Non-durables		..	..	..	..	..	..
29	Durables		..	..	..	..	..	..
30	Electric power and gas utilities		..	..	..	..	..	..
	Construction—							
31	Value of contracts awarded	$	..	..	..	..	345,425,000	240,133,300

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[1] 1887. [2] 1898. [3] 1889. [4] 1874. [5] 1892. [6] Beginning in 1956, tons. [7] Includes other items not specified. [8] Central electric stations prior to 1956. [9] Hp. prior to 1956; kw.

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

1931	1941	1951	1957	1958	1959	1960	
2,693,892	5,345,179	4,392,751●	4,433,894	4,571,347	4,483,416	4,602,762	1
58,093,396	205,789,392	161,872,873●	148,757,143	155,334,370	150,508,275	156,171,715	
20,562,247	21,754,408	23,125,825●	28,823,298	31,163,470	31,923,969	32,328,143	2
6,141,943	8,323,454	21,865,467●	25,182,915	27,053,007	28,022,860	28,726,788	
292,304,390	643,316,713	539,941,589●	718,218,535	690,227,408	790,538,660	876,766,931	3
24,114,065	64,407,497	149,026,216●	206,897,988	174,430,930	233,102,813	264,336,899	
267,342,482	460,167,005	316,462,751●	362,968,529	373,360,966	373,391,461	378,533,595	4
7,260,183	15,470,815	58,229,146●	50,670,407	42,413,805	39,616,835	40,427,281	
237,245,451	512,381,636	682,224,335●	827,481,656	850,197,572	792,015,223	811,239,533	5
6,059,249	17,477,337	135,762,643●	100,042,533	92,501,496	96,942,663	108,209,749	
65,666,320	282,258,235	275,806,272●	375,916,551	279,117,422	373,110,226	427,282,898	6
15,267,453	68,656,795	151,269,994●	258,977,309	194,142,019	257,008,801	312,738,234	
12,243,211	18,225,921	18,586,823●	13,189,155	11,687,110	10,626,722	11,226,420	7
41,207,682	58,059,630	109,038,835●	90,220,670	79,963,327	73,875,895	76,059,631	
25,874,723	43,495,353	79,460,667●	220,006,682	337,803,726	417,334,527	504,452,000	8
9,026,754	12,665,116	7,158,920●	20,962,501	32,057,536	39,609,393	48,027,110	
1,542,573	10,133,838	47,615,534●	181,848,004	165,496,196	184,778,497	192,308,250	9
4,211,674	14,415,096	116,655,238●	453,593,620	398,747,818	422,092,535	432,495,700	
164,296	477,846	973,198●	1,046,086	925,331	1,050,429	1,140,538	10
4,812,886	21,468,840	81,584,345●	104,489,431	92,276,748	107,433,344	118,700,998	
10,161,658	8,368,711	17,007,812●	6,049,098	6,153,421	6,284,486	5,697,859	11
15,826,243	13,063,588	40,446,288●	93,167,477	96,414,142	95,147,798	91,111,862	
230,434,726	560,241,290	1,245,483,595●	2,190,322,392	2,100,739,038	2,409,020,511	2,476,240,506[p]	
5,891	8,352	13,031●	16,728	18,669	21,109	..	12
16,330,867	33,317,663	54,851,844●	91,059,991[10]	97,484,289	104,613,564	..	13
1,632,792	2,081,270	3,439,750●	4,611,178[11]	4,809,634	5,018,720	..	14
122,311	179,660	366,705	639,998	691,703	755,772	..	15
30,517,306	62,258,997	204,912,000●	188,018,000	231,541,000	202,124,000	..	16
4,060,356	7,257,337	7,479,272	6,919,724●	6,440,319	5,370,531	6,000,298	17
11,803,217	21,123,161	31,134,400	25,592,130●	26,335,109	25,800,555	31,203,451	
8,497,237	7,928,971	10,195,561	..	..	..	..	18
528,640	961,178	1,258,375●	1,359,061	1,289,602	1,303,956	..	19
3,705,701,893	4,905,503,966	..	..	..	..	..	20
587,566,990	1,264,862,643	3,276,280,917●	4,819,627,999	4,802,496,260	5,073,073,706	..	21
1,221,911,982	3,296,547,019	9,074,526,353●	11,900,751,703	11,821,567,471	12,552,200,543	..	22
2,555,126,448	6,076,308,124	16,392,187,132●	22,183,594,311	22,163,186,308	23,311,601,481	..	23
1,252,017,248	2,605,119,788	6,940,946,783●	9,822,084,726	9,792,505,931	10,320,962,881	..	24
..	80.1	116.6●	155.4	154.4	166.2	167.5	25
..	101.0	123.4●	227.8	227.0	251.1	253.3	26
..	78.7	115.0●	142.9	140.7	150.0	149.5	27
..	73.7	110.8●	139.7	141.3	150.4	152.5	28
..	85.8	119.9●	146.7	139.9	149.5	145.9	29
..	64.2	129.4●	220.3	239.1	268.7	298.0	30
315,482,000	393,991,300	2,295,499,200●	2,894,168,100	3,593,709,200	3,219,073,300	3,053,749,500	31

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beginning in 1956.

[10] New series beginning in 1956.

[11] Beginning in 1956 only ultimate customers are included.

[12] Years ended June 30.

[13] In 1952 gross value of products was replaced by value of factory shipments.

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

	Item		1871	1881	1891	1901	1911	1921
	Transportation—							
	RAILWAYS—							
1	Miles in operation	No.	2,695	7,194	13,838	18,140	25,400	39,191
2	Capital liability	$	257,035,188[1]	284,419,293	632,061,440	816,110,837	1,528,689,201	2,164,687,636
3	Passengers	No.	5,190,416[2]	6,943,671	13,222,568	18,385,722	37,097,718	46,793,251
4	Freight	ton	5,670,836[2]	12,065,323	21,753,021	36,999,371	79,884,282	83,730,829
5	Earnings	$	19,470,540[2]	27,987,509	48,192,099	72,898,749	188,733,494	458,008,891
6	Expenses	$	15,775,532[2]	20,121,418	34,960,449	50,368,726	131,033,785	422,581,205
	URBAN TRANSIT SYSTEMS—							
7	Passengers carried	No.	..	..	..	..	..	..
8	Vehicle-miles run	"	..	..	..	..	..	..
9	Gross passenger revenue	$	..	..	..	..	..	..
	ROAD TRANSPORTATION—							
10	Highways, total milages	No.	..	..	..	..	..	..
11	Motor vehicles registered	"	..	..	..	..	21,783	464,805
	SHIPPING—							
12	Vessels on the registry	No.	..	7,394	7,015	6,697	8,088	7,482
		ton	..	1,310,896	1,005,475	666,276	770,446	1,223,973
	International Sea-borne—[4,5]							
13	Entered	ton	6,576,771	6,967,449	9,372,369	13,235,307	25,205,441	27,344,957
14	Cleared	"	6,549,257	6,834,983	9,430,279	12,794,501	22,224,104	27,303,673
15	Totals	"	13,126,028	13,802,432	18,802,648	26,029,808	47,429,545	54,648,630
	Coastwise—[4]							
16	Entered	ton	..	7,664,863	12,835,774	17,927,959	34,280,669	28,567,545
17	Cleared	"	..	7,451,903	12,150,356	16,516,837	32,347,265	27,773,668
18	Totals	"	..	15,116,766	24,986,130	34,444,796	66,627,934	56,341,213
	CANALS—							
19	Passengers carried	No.	100,377	118,136	146,336	190,428	304,904	230,129
20	Freight	ton	3,955,621	2,853,230	2,902,526	5,665,259	38,030,353	9,407,021
	AIR TRANSPORTATION—[6]							
21	Miles flown (revenue)	No.	..	..	..	..	..	294,449
22	Passenger miles (revenue)	"	..	..	..	..	..	..
23	Freight carried (revenue)	lb.	..	..	..	..	..	79,850
24	Mail carried	"	..	..	..	..	..	..
	Communications—							
25	Telegraphs, miles of line	No.	..	1,947	30,565	35,938	42,351	52,784
26	Telephones	"	..	..	..	63,192	302,759[7]	902,090
27	Telephones, employees[9]	"	..	..	..	..	10,425[7]	19,943
	Post Office—							
28	Revenue	$	803,637	1,344,970	2,515,824	3,421,192	9,146,952	26,331,119
29	Expenditure	$	994,876	1,876,658	3,161,676	3,837,376	7,954,223	24,661,262
30	Money orders issued	$	4,546,434	7,725,212	12,478,178	17,956,258	70,614,862	173,523,322
	Wholesale and Retail Trade—							
	Wholesale—							
31	Establishments	No.	..	..	..	..	..	..
32	Employees	"	..	..	..	..	..	..
33	Net sales[13]	$'000	..	..	..	..	..	..
34	Retail—Stores	No.	..	..	..	..	..	..
35	Employees, full-time	"	..	..	..	..	..	..
36	Net sales	$'000	..	..	..	..	..	..
	Services—							
37	Establishments	No.	..	..	..	..	..	..
38	Employees	"	..	..	..	..	..	..
39	Receipts	$	..	..	..	..	..	..

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[1] 1876. [2] 1875. [3] Includes highway transport (rail) operations. [4] Fiscal years prior to 1941. [5] Includes sea-going and inland international. [6] Includes Atlantic and Pacific overseas services of Canadian carriers from 1951. [7] As at June 30. [8] Preliminary; represents approximately 94 p.c. of industry. [9] Excludes rural lines in Saskatchewan. [10] Census figures for 1930. [11] Average

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

1931	1941	1951	1957	1958	1959	1960	
42,280	42,441	42,956●	43,890	44,125	44,209	44,029	1
4,232,022,088	3,397,488,564	3,571,693,932●	4,330,219,893	4,599,774,523	4,791,737,482	4,970,399,496	2
26,396,812	29,779,241	30,995,604●	22,965,974	21,376,438	20,939,928	19,497,233	3
74,129,694	116,808,091	161,260,521●	174,163,028	153,524,948	166,186,216	158,466,368	4
358,549,382	538,291,947	1,088,583,789●	1,365,464,639[3]	1,269,607,264[3]	1,337,580,043[3]	1,266,881,215[3]	5
321,025,588	403,733,542	977,577,062●	1,302,028,581[3]	1,232,387,115[3]	1,272,239,236[3]	1,215,738,355[3]	6
..	..	..	1,125,608,597	1,079,712,025	1,056,812,775	..	7
..	..	..	204,031,286	199,480,833	200,085,927	..	8
..	..	..	133,039,879	133,732,764	140,195,856	..	9
378,094	561,489	511,878●	423,939	401,887	423,035	..	10
1,200,668	1,572,784	2,872,420●	4,459,595	4,723,825	5,017,686	5,256,341	11
8,966	8,667	15,292●	18,294	18,797	19,507	20,381	12
1,484,423	1,271,811	1,659,351●	1,730,139	1,754,382	1,819,034	1,903,300	
45,834,452	31,452,400	47,508,342●	66,149,552	57,738,034	67,526,464	74,805,070	13
45,077,424	33,313,400	52,750,461●	68,822,187	60,077,872	70,583,802	77,675,892	14
90,911,876	64,765,800	100,258,803●	134,971,739	117,815,906	138,110,266	152,580,962	15
47,134,652	48,107,158	60,802,798●	76,535,160	76,197,625	85,536,408	..	16
47,540,555	46,433,320	55,609,082●	73,565,370	74,012,136	82,359,631	..	17
94,675,207	94,540,478	116,411,880●	150,100,530	150,209,761	167,896,039	..	18
126,633	100,092	93,512	98,464	145,562	207,968	183,862	19
16,189,074	23,453,367	29,325,034	37,230,349	35,098,587	51,076,132	52,946,883	20
7,046,276	12,508,390	52,578,934●	104,699,140	99,858,279	110,503,312	109,525,125	21
4,073,552	56,723,714	689,819,451●	1,835,183,870	2,142,276,186	2,495,457,030	2,846,973,847	22
2,372,467	16,559,611	59,199,354●	264,812,177	200,388,312	213,030,631	217,220,865	23
470,461	3,411,971	16,824,652●	31,413,504	33,628,013	35,543,446	37,472,154	24
53,228	52,246	53,580●	48,379	47,495	47,535	48,159	25
1,364,200	1,562,146	3,113,766●	4,827,135	5,118,293	5,439,023	5,432,812[8]	26
23,825	20,103	47,387●	64,074	61,400	58,826	55,824p	27
30,416,107	40,383,366	90,454,678●	145,823,785	152,919,881	157,630,336	167,562,354	28
36,292,604	38,699,674	91,781,466●	139,992,921	153,319,782	157,803,478	165,792,339	29
167,749,651	173,565,550	511,915,621●	799,615,004	845,647,439	853,443,891	868,669,133	30
13,140[10]	24,758	26,167●	..	..	..	..	31
90,564[10]	117,471	178,658[11]● 224,526[12]●	.. ..	.. ..	.. ..	.. ..	32
3,325,210[10]	5,290,751	14,401,037●	7,691,500[14]	7,905,700[14]	8,752,600[14]	8,878,500[14]	33
124,608[10]	136,990	153,034●	..	..	..	..	34
238,683[10]	297,047	454,794[11]● 603,891[12]●	.. ..	.. ..	.. ..	.. ..	35
2,735,740[10]	3,414,613	10,693,097●	14,826,441[14]	15,444,341[14]	16,283,558[14]	16,413,465[14]	36
42,223[15]	49,271	58,748[16]●	..	..	..	..	37
55,257[15]	62,781	143,800[11, 16]● 190,048[12, 16]●	.. ..	.. ..	.. ..	.. ..	38
249,455,900[15]	254,678,000	1,085,757,900●	..	..	..	..	39

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minimum. [12] Average maximum. [13] Wholesale proper only for 1957 and subsequent years. [14] Estimated on intercensal survey. [15] Census figures for 1930. [16] Figures include 5,542 hotels with 46,556 average minimum and 64,062 average maximum full-time employees and with receipts of $348,401,100.

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

	Item	1871	1881	1891	1901	1911	1921
1	**Bankruptcies and Insolvencies**[1] No.	..	..	..	..	..	..
2	Liabilities $'000	..	..	..	..	..	..
	Foreign Trade—[2],[3]						
3	Exports, domestic $'000	57,630	83,945	88,672	177,431	274,317	1,189,164
4	Re-exports $'000	9,853	13,375	8,799	17,078	15,684	21,264
5	Imports, for consumption $'000	84,214	90,488	111,534	177,931	452,725	1,240,159
	Totals, Foreign Trade $'000	151,698	187,808	209,004	372,440	742,725	2,450,587
6	Domestic exports to all Commonwealth $'000	25,346	45,980	47,137	100,748	148,967	403,452
7	Exports to United Kingdom $'000	21,734	42,637	43,244	92,858	132,157	312,845
8	Imports from all Commonwealth $'000	51,317	45,514	44,337	46,653	129,468	266,003
9	Imports from United Kingdom $'000	48,498	42,885	42,019	42,820	109,935	213,974
10	Exports to United States $'000	29,164	34,038	37,743	67,984	104,116	542,323
11	Imports from United States $'000	27,186	36,339	52,033	107,378	275,824	856,177
12	Exports to other countries $'000	3,120	3,926	3,791	8,700	21,233	243,389
13	Imports from other countries $'000	5,712	8,635	15,163	23,900	47,433	117,979
	EXPORTS, DOMESTIC, BY CHIEF ITEMS—						
14	Wheat '000 bu.	1,749	2,524	2,108	9,740	45,802	129,215
	$'000	1,982	2,594	1,583	6,872	45,521	310,952
15	Wheat flour '000 bbl.	306	440	297	1,119	3,049	6,017
	$'000	1,610	2,173	1,389	4,015	13,855	66,520
16	Oats '000 bu.	542	2,927	261	8,155	5,432	14,321
	$'000	231	1,192	130	2,491	2,145	14,152
17	Barley '000 bu.	..	8,811	4,892	2,386	1,545	8,564
	$'000	..	6,261	2,930	1,123	831	11,469
18	Bacon, hams, shoulders and sides '000 cwt.	103	104	76	1,055	599	982
	$'000	1,019	758	628	11,778	8,526	31,492
19	Beef and veal '000 cwt.	41	14	3	97	10	520
	$'000	241	84	16	813	92	8,331
20	Cheese '000 lb.	8,271	49,256	106,202	195,926	181,896	133,620
	$'000	1,110	5,510	9,509	20,697	20,740	37,147
21	Planks and boards M ft.	829,550	652,621	775,793	735,695	1,127,723	1,604,463
	$'000	8,356	7,102	8,627	9,381	21,510	71,079
22	Wood pulp '000 cwt.	..	..	..	..	6,589	14,363
	$'000	..	..	281	1,937	5,716	71,552
23	Newsprint '000 cwt.	..	..	..	..	..	15,113
	$'000	..	..	..	..	3,092	78,922
24	Farm implements $'000	..	31	253	1,743	5,912	12,527
25	Copper '000 lb.	6,246	39,604	10,994	26,346	55,005	74,176
	$'000	120	150	505	2,659	5,575	12,748
26	Nickel '000 lb.	..	..	5,352	9,538	34,768	47,018
	$'000	..	..	240	958	3,842	9,405
27	Lead '000 cwt.	6	..	..	656	32	111
	$'000	[illegible]	..	[illegible]	2,517	101	526
28	Zinc '000 cwt.	..	..	..	..	..	177
	$'000	..	..	..	..	..	964
29	Asbestos '000 ton	..	..	7	27	70	191
	$'000	..	..	514	865	2,076	12,633
	EXPORTS, DOMESTIC, BY GROUP—						
30	Vegetable products (except chemicals, fibres and wood) $'000	..	..	13,743	25,542	84,368	482,140
31	Animals and their products (except chemicals and fibres) $'000	..	..	36,399	68,465	69,693	188,360
32	Fibres, textiles and textile products $'000	..	..	873	1,881	1,819	18,784
33	Wood, wood products and paper $'000	..	..	25,351	33,100	56,335	284,561
34	Iron and its products $'000	..	..	557	3,779	9,884	76,501
35	Non-ferrous metals and their products $'000	..	..	1,619	33,395	34,001	45,939
36	Non-metallic minerals and their products (except chemicals) $'000	..	..	3,989	7,356	10,038	40,345
37	Chemicals and allied products $'000	..	..	851	792	3,089	20,143
38	All other commodities $'000	..	..	5,291	3,122	5,089	32,390
	Totals, Exports, Domestic. $'000	57,630	83,945	88,672	177,431	274,317	1,189,164

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[1] Under federal legislation.

[2] Fiscal years prior to 1931.

[3] Figures for 1960 adjusted to "Special

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

1931	1941	1951	1957	1958	1959	1960	
..	..	..	2,213●	2,125	2,229	2,699	1
..	..	..	79,863●	72,778	95,786	148,253	2
587,653	1,621,003	3,914,460●	4,839,094	4,823,347	5,060,710	5,264,052	3
11,907	19,451	48,924●	95,286	102,942	118,668	131,217	4
628,098	1,448,792	4,084,856●	5,623,410	5,192,351	5,654,423	5,492,348	5
1,227,659	3,089,246	8,048,241●	10,557,791	10,118,640	10,833,801	10,887,617	
219,781	878,641	872,407●	970,648	1,056,575	1,063,578	1,242,248	6
170,597	658,228	631,461●	737,530	773,804	788,618	915,290	7
152,000	359,942	727,089●	760,819	736,512	837,455	867,998	8
109,468	219,419	420,985●	521,958	526,650	596,562	588,930	9
240,197	599,713	2,297,675●	2,867,608	2,827,417	3,107,846	2,932,171[4]	10
393,775	1,004,498	2,812,927●	3,998,549	3,572,379	3,829,438	3,693,189[4]	11
127,675	142,649	744,379●	1,000,838	939,355	889,286	1,089,633	12
82,323	84,351	544,840●	864,042	883,460	987,531	931,161	13
194,826	196,646	237,061●	232,461	271,796	263,721	242,859	14
117,871	161,856	441,043●	380,415	446,078	441,830	410,453	
5,697	11,439	12,079●	7,610	8,789	8,459	15,775	15
20,207	44,807	113,854●	61,175	69,398	64,903	62,239	
11,177	7,692	59,273●	29,941	16,957	9,015	6,291	16
3,768	3,295	53,899●	22,390	13,016	7,320	5,786	
24,260	3,209	43,905●	61,377	74,623	62,570	47,799	17
9,924	1,959	58,822●	67,522	78,118	66,310	51,441	
128	4,646	61●	47	56	57	60	18
2,035	77,494	3,650●	4,138	4,430	4,555	4,470	
37	62	934●	474	537	228	184	19
430	996	50,965●	13,356	20,185	9,219	7,062	
84,788	92,331	30,653●	8,456	15,701	20,010	18,780	20
10,595	13,555	10,232●	3,079	5,002	7,230	6,494	
937,733	2,282,139	3,435,510●	3,635,497	3,922,953	4,179,892[5]	4,574,333	21
20,116	74,205	312,198●	281,681	292,013	323,717[5]	346,300	
12,451	28,234	44,866●	45,653	44,386	49,001	52,029	22
30,057	85,898	365,133●	292,406	285,449	311,253	325,122	
40,165	65,240	102,241●	118,013	113,657	118,203	123,806	23
107,233	154,357	536,372●	715,490	690,209	722,271	757,930	
2,839	30,972	106,438●	69,676	97,594	114,695	85,426	24
196,789	430,087	304,193●	534,613	555,658	546,824	703,282	25
17,065	40,951	81,691●	162,109	135,021	158,827	211,431	
63,529	275,190	262,366●	357,315	308,440	343,851	391,034	26
14,182	67,680	136,689●	248,253	212,580	226,857	258,331	
2,208	3,818	2,536●	2,581	2,937	2,980	3,089	27
4,660	13,525	45,290●	29,396	26,099	25,470	26,043	
2,391	3,988	6,105●	7,890	8,382	7,406	7,646	28
5,565	12,278	83,669●	64,921	55,385	55,287	63,534	
159	454	942●	1,031	867	1,014	1,068	29
5,175	19,411	80,333●	107,058	90,745	110,431	120,113	
209,761	285,709	894,210●	831,579	885,339	868,904	831,479	30
70,938	201,731	348,033●	302,051	397,695	355,975	319,945	31
5,394	30,820	36,858●	27,162	20,660	24,997	39,219	32
185,493	387,113	1,399,076●	1,456,125	1,413,989	1,515,962	1,591,919	33
19,086	239,901	342,299●	518,835	432,433	563,344	605,225	34
56,159	244,012	569,870●	1,006,186	1,023,607	1,114,784	1,222,476	35
14,977	45,172	131,529●	347,705	250,351	294,235	339,569	36
10,849	58,676	131,690●	195,303	197,051	201,729	237,687	37
14,995	127,869	60,895●	154,147	202,221	120,781	76,534	38
587,653	1,621,003	3,914,460●	4,839,094	4,823,347	5,060,710	5,264,052	

Transactions—Non-Trade", see explanation p. 967. [4] Includes Hawaii for 1960. [5] Beginning in 1959
lumber and timber. [6] Less than $500.

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

	Item		1871	1881	1891	1901	1911	1921
	Foreign Trade—concluded							
	IMPORTS FOR CONSUMPTION—							
1	Vegetable products (except chemicals, fibres and wood).	$'000	..	..	24,212	38,036	79,214	259,431
2	Animals and their products (except chemicals and fibres)...	$'000	..	..	8,081	14,023	30,672	61,722
3	Fibres, textiles and textile products..................	$'000	..	..	28,670	37,285	87,916	243,608
4	Wood, wood products and paper........................	$'000	..	..	5,203	8,197	26,852	57,449
5	Iron and its products..........	$'000	..	..	15,143	29,956	91,968	245,626
6	Non-ferrous metals and their products..................	$'000	..	..	3,811	7,167	27,580	55,651
7	Non-metallic minerals and their products (except chemicals)........................	$'000	..	..	14,139	21,255	53,431	206,095
8	Chemicals and allied products.	$'000	..	..	3,698	5,685	12,472	37,887
9	All other commodities........	$'000	..	..	8,577	16,327	42,620	72,688
	Totals, Imports............	$'000	84,214	90,488	111,534	177,931	452,725	1,240,159
	Prices—							
10	General wholesale index (1935–39=100)....................		81.3	72.4	67.1	63.7	81.1	143.4
11	Consumer price index (1949=100)...		..	..	..	..	..	80.9
	Federal Finance—							
12	Customs duties...............	$	11,841,105	18,406,092	23,305,218	28,293,930	71,838,089	163,266,804
13	Excise duties..................	$	4,295,945	5,343,022	6,914,850	10,318,266	16,869,837	37,118,367
14	Income tax....................	$	...	...	...	...	...	46,381,824
15	Sales tax (net)................	$	...	...	...	...	...	38,114,539
16	Total receipts from taxation...	$	16,320,369	23,942,139	30,220,068	38,612,196	88,707,926	368,770,498
17	Per capita receipts from taxes..	$	4.50	5.63	6.32	7.28	12.69	43.10
18	Total revenue.................	$	19,335,561	29,635,298	38,579,311	52,514,701	117,780,409	436,292,185
19	Revenue per capita............	$	5.34	6.96	8.07	9.91	16.87	50.99
20	Total expenditure.............	$	19,293,478	33,796,643	40,793,208	57,982,866	122,861,250	528,302,513
21	Expenditure per capita........	$	5.32	7.94	8.54	10.94	17.58	61.75
22	Gross debt....................	$	115,492,683	199,861,537	289,899,230	354,732,433	474,941,487	2,902,482,117
23	Net assets....................	$	37,786,165	44,465,757	52,090,199	86,252,429	134,899,435	561,603,133
24	Net debt......................	$	77,706,518	155,395,780	237,809,031	268,480,004	340,042,052	2,340,878,984
	Provincial Finance—							
25	Gross ordinary revenue[3].......	$	5,518,946	7,858,698	10,693,815	14,074,991	40,706,948	102,030,458
26	Gross ordinary expenditure[3]...	$	4,935,008	8,119,701	11,628,353	14,146,059	38,144,511	102,569,515
27	Net general revenue...........	$	..	..	..	..	..	..
28	Net general expenditure.......	$	..	..	..	..	..	..
	Municipal Finance—[7]							
29	Gross ordinary revenue........	$	..	..	..	..	..	..
30	Gross ordinary expenditure....	$	..	..	..	..	..	..
	National Accounts—							
31	National income...........	$'000,000	..	..	..	..	..	..
	Note Circulation—							
32	Chartered bank notes.........	$	20,914,637	28,516,692	33,061,042	50,601,205	89,982,223	194,621,710
33	Bank of Canada and other notes[11]......................	$	7,244,341	14,539,795	16,176,316	27,898,509	99,308,945	271,531,162
	Chartered Banks—							
34	Capital, paid-up..............	$	37,095,340	59,534,977	60,700,697	67,035,615	103,009,256	129,096,339
35	Assets........................	$	125,273,631	200,613,879	269,307,032	531,829,324	1,303,131,260	2,841,782,079
36	Liabilities to the public.......	$	80,250,974	127,176,249	187,332,325	420,003,743	1,097,661,393	2,556,454,190
37	Deposits payable on demand..	$	..	..	..	95,169,631	304,801,755	551,914,643
38	Deposits payable after notice..	$	..	..	..	221,624,664	568,976,209	1,289,347,063
39	Totals, deposits[11,13]...........	$	56,287,391	94,346,481	148,396,968	349,573,327	980,433,788	2,264,586,736
40	Cheque payments.............	$'000	..	..	..	..	..	27,157,474[14]
	Savings Banks—							
41	Deposits in Post Office........	$	2,497,260	6,208,227	21,738,648	39,950,813	43,330,579	29,010,619
42	Deposits in government banks	$	2,072,037	9,628,445	17,661,378	16,098,146	14,673,752	10,150,189
43	Deposits in special banks......	$	5,766,712	7,685,888	10,982,232	19,125,097	34,770,386	58,576,775

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[1] Old Age Security taxes and pensions which commenced on Jan. 1, 1952, not included for 1957 and subsequent years. [2] Figures for 1957 and subsequent years are not comparable with previous years as they exclude refunds applicable to other excise duties. [3] Gross ordinary totals are no longer published. Net general revenue and expenditure are available for 1947 and thereafter. [4] Includes Yukon Territory in this and subsequent years. [5] Includes the Northwest Territories. [6] Preliminary; excludes Yukon and Northwest Territories. [7] Fiscal years ended Dec. 31. [8] Includes Yukon and Northwest Territories. [9] Es-

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

1931	1941	1951	1957	1958	1959	1960	
134,433	171,835	542,641●	652,225	652,686	684,026	681,265	1
28,630	34,846	125,562●	124,617	128,934	146,635	143,693	2
90,152	161,139	483,520●	408,651	387,357	420,152	433,549	3
34,923	36,739	137,047●	225,888	235,608	272,274	266,123	4
116,209	431,622	1,332,251●	2,131,030	1,852,174	2,092,093	2,046,307	5
38,667	94,758	290,848●	484,863	432,178	471,253	471,120	6
106,088	189,954	684,535●	777,661	682,854	705,606	672,170	7
31,337	65,382	191,813●	293,821	290,358	326,987	338,652	8
47,659	262,516	296,638●	524,656	530,204	535,397	439,468	9
628,098	1,448,792	4,084,856●	5,623,410	5,192,351	5,654,423	5,492,348	
94.0	116.4	240.2	227.4	227.8	230.6	230.9	10
67.9	69.6	113.7	121.9	125.1	126.5	128.0	11
131,208,955	130,757,011	295,721,750●	549,074,860	498,068,539	486,508,581	525,722,158	12
57,746,808	88,607,559	241,046,174●	271,443,661	300,132,512	316,744,269	335,207,406	13
71,048,022	248,143,022	1,513,135,510●	2,745,199,494[1]	2,798,929,195	2,435,262,769	2,782,876,766	14
20,783,944	179,701,224	460,120,405●	717,080,563[1,2]	703,169,768	694,490,787	732,658,330	15
296,276,396	778,175,450	2,785,349,899●	4,647,931,771	4,622,827,382	4,247,378,526	4,752,339,938	16
29.02	68.37	203.13●	289.03	278.67	249.14	272.47	17
356,160,876	872,169,645	3,112,535,948●	5,106,540,880	5,048,788,279	4,754,722,689	5,289,751,209	18
35.04	76.63	226.99●	317.55	304.35	278.90	303.28	19
440,008,855	1,249,601,446	2,901,241,698●	4,849,035,298[1]	5,087,411,011	5,364,039,533	5,702,861,053	20
43.26	109.80	211.58●	301.54	306.67	314.64	326.96	21
2,610,265,699	5,018,928,037	16,923,307,028●	18,326,190,715	18,418,541,848	20,249,931,793	20,986,367,010	22
348,653,762	1,370,236,588	5,489,992,080●	7,318,539,557	7,372,267,958	8,571,541,933	8,897,173,007	23
2,261,611,937	3,648,691,449	11,433,314,948●	11,007,651,158	11,046,273,890	11,678,389,860	12,089,194,003	24
179,143,480	404,791,000[4]	1,139,026,000●	1,966,714,000[5]	..	..	..	25
190,754,202	349,818,000[4]	1,040,871,000●	1,779,033,000[5]	..	..	..	26
..	..	952,453,000	1,792,557,000	2,025,573,000	2,178,869,000	2,443,730,000[6]	27
..	..	942,304,000	1,773,818,000	2,036,987,000	2,229,174,000	2,585,850,000[6]	28
..	..	758,237,000●	1,404,037,000[8]	1,552,087,000[8]	1,696,552,000[6]	1,820,597,000[9]	29
..	..	748,039,000●	1,395,593,000[8]	1,546,755,000[8]	1,691,100,000[6]	1,819,385,000[9]	30
3,382	6,305	16,588●	24,011	24,944	26,676	27,375	31
128,881,241	78,761,049	[10]	[10]	[10]	[10]	[10]	32
153,079,362	406,433,409	1,360,679,422	1,903,721,000	1,998,046,000	2,020,525,000	2,061,743,000	33
144,674,853	145,500,000	146,502,115●	211,879,000[12]	225,609,000	254,115,000	265,564,000	34
3,066,018,472	4,008,381,256	9,384,800,263●	14,243,504,000[12]	15,840,274,000	15,834,924,000	16,917,096,000	35
2,741,554,219	3,711,870,680	9,019,780,755●	13,520,067,000[12]	15,034,123,000	14,919,431,000	15,921,378,000	36
578,604,394	1,088,198,370	2,711,524,845●	4,095,483,000[12]	4,635,915,000	4,144,353,000	4,301,354,000	37
1,437,976,832	1,616,129,007	4,592,929,318●	6,655,435,000[12]	7,462,083,000	7,457,181,000	7,790,553,000	38
2,422,834,828	3,464,781,844	8,464,510,837●	13,234,001,000[12]	14,766,738,000	14,650,919,000	15,575,499,000	39
31,586,468	39,242,957	112,184,633●	205,558,447	221,289,954	248,869,352	269,619,054	40
24,750,227	22,176,633	37,661,921●	35,918,499	34,895,729	34,155,617	29,372,461	41 42
69,820,422	76,391,775	193,982,871	255,000,311	266,585,424	279,626,478	272,614,366	43

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timated; excludes Yukon and Northwest Territories.

[10] In January 1950, the chartered banks' liability for such of their notes as then remained outstanding was transferred to the Bank of Canada.

[11] As at June 30 from 1871 to 1901. Annual averages of month-end figures from 1911 to 1951. As at Dec. 31 for 1957 and subsequent years.

[12] Figures for 1957 and subsequent years not strictly comparable with previous years.

[13] Includes deposits of federal and provincial governments and also deposits elsewhere than in Canada from 1901.

[14] 1924.

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—concluded

	Item		1871	1881	1891	1901	1911	1921
	Loan Companies (Federal)—							
1	Assets	$	8,392,464	73,906,638	125,041,146	158,523,307	389,701,988	96,698,810
2	Liabilities	$	8,392,958	71,965,017	123,915,704	158,523,307	389,701,988	95,281,122
	Loan Companies (Provincial)—							
3	Assets	$	..	..	..	..	..	86,144,153[1]
4	Liabilities	$	..	..	..	..	..	87,385,807[1]
	Licensees under the Small Loans Act—							
	SMALL LOANS COMPANIES—							
5	Assets	$	..	..	..	..	..	..
6	Liabilities	$	..	..	..	..	..	..
	MONEY-LENDERS—							
7	Assets	$	..	..	..	..	..	..
8	Liabilities	$	..	..	..	..	..	..
	Trust Companies (Federal)—							
	ASSETS—							
9	Company funds	$	..	..	..	..	..	10,237,930
10	Guaranteed funds	$	..	..	..	..	..	8,774,185
	LIABILITIES—							
11	Company funds	$	..	..	..	..	..	9,907,331
12	Guaranteed funds	$	..	..	..	..	..	8,549,642
13	ESTATES, TRUST AND AGENCY FUNDS	$	..	..	..	..	..	79,252,639
	Trust Companies (Provincial)—[4]							
	ASSETS—							
14	Company funds (par value)	$	..	..	..	..	..	31,418,403
15	Guaranteed funds (par value)	$	..	..	..	..	..	32,885,302
16	ESTATES, TRUST AND AGENCY FUNDS	$	..	..	..	..	..	629,953,917
	Federal Fire Insurance—[5]							
17	Amounts at risk, Dec. 31	$	228,453,784	462,210,968	759,602,191	1,038,687,619	2,279,868,346	6,020,513,832
18	Premium income for each year	$	2,321,716	3,827,116	6,168,716	9,650,348	20,575,255	47,312,564
19	Claims paid during each year	$	1,549,199	3,169,824	3,905,697	6,774,956	10,936,948	27,572,560
	Provincial Fire Insurance—							
20	Amount at risk, Dec. 31	$	..	..	..	..	..	1,269,764,435
21	Premium income for each year	$	..	..	..	..	..	5,545,549
22	Claims paid during each year	$	..	..	..	..	..	3,544,820
	Federal Life Insurance—[5]							
23	Amounts in force, Dec. 31	$	45,825,935	103,290,932	261,475,229	463,769,034	950,220,771	2,934,843,848
24	Premium income for each year	$	1,852,974	3,094,689	8,417,702	15,189,854	31,619,626	98,864,371
25	Claims paid during each year	$	..	..	..	6,845,941	11,051,679	23,997,262
	Provincial Life Insurance—							
26	Amounts in force, Dec. 31	$	..	..	..	..	..	222,871,178
27	Premium income for each year	$	..	..	..	..	..	4,389,008
28	Claims paid during each year	$	..	..	..	..	..	2,812,077

[1] 1922. [2] Includes money-lenders. [3] Included with small loans companies. [4] Compiled from data supplied voluntarily to the Superintendent of Insurance by provincial companies and estimated to cover

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—concluded

1931	1941	1951	1957	1958	1959	1960	
147,094,183	130,795,391	203,103,850	320,144,380	358,735,601	408,793,088	..	1
146,046,087	130,787,116	165,768,886	280,238,094	314,971,124	363,686,767	..	2
65,728,238	58,220,073	88,991,635	228,927,416	246,637,900	262,715,544	..	3
66,387,987	58,220,073	63,699,805	160,429,357	178,348,999	192,440,925	..	4
827,373	7,918,926	73,980,068	326,549,959[2]	408,581,861[2]	489,458,577[2]	..	5
823,120	7,918,926	73,980,068	326,549,959[2]	408,581,861[2]	489,458,577[2]	..	6
..	11,351,467	30,570,466	[3]	[3]	[3]	..	7
..	11,351,467	30,570,466	[3]	[3]	[3]	..	8
15,459,347	20,596,781	28,446,331	38,843,072	36,551,294	39,702,594	..	9
25,718,219	38,570,855	93,565,917	176,964,312	238,743,359	261,752,047	..	10
15,066,431	20,086,776	26,658,321	38,583,249	36,551,294	39,702,594	..	11
25,718,221	38,570,855	93,565,917	176,964,312	238,743,359	261,752,047	..	12
215,698,469	268,596,524	543,983,754	886,560,559	990,078,160	1,127,767,607	..	13
66,338,148	58,165,471	74,399,404	97,258,395	106,914,805	117,135,913	..	14
125,829,165	108,912,208	258,413,136	472,678,645	588,188,712	660,663,751	..	15
1,961,948,175	2,418,950,841	3,282,558,573	4,695,817,867	5,328,920,074	5,774,745,226	..	16
9,544,641,293	11,386,819,286	33,490,653,184●	..	..	..	..	17
50,342,669	49,305,539	134,496,218●	156,246,117	177,364,450	196,702,991	..	18
29,938,409	17,814,322	52,086,541●	109,757,161	88,151,837	96,054,754	..	19
1,341,184,333	1,120,181,968	2,887,564,984●	..	..	..	..	20
7,185,066	3,992,765	11,614,247●	19,779,452	23,977,899	26,898,159	..	21
4,985,605	2,237,832	6,174,914●	12,402,752	13,320,365	14,725,798	..	22
6,622,267,793	7,348,550,742	17,235,583,302●	33,087,056,501	36,495,778,685	40,873,809,772	..	23
225,100,571	203,459,238	394,019,379●	607,110,740	648,513,585	697,740,894	..	24
56,579,358	75,082,008	128,489,084●	200,669,872	211,917,773	223,293,007	..	25
202,094,301	164,451,218	708,733,573●	2,106,173,517	2,355,328,564	2,272,885,000	..	26
5,178,615	3,988,952	16,806,502●	38,466,850	41,080,135	44,854,000	..	27
2,603,453	2,583,958	6,727,241●	12,577,321[6]	13,614,911	14,165,000	..	28

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about 90 p.c. of all provincial business. The figures include all the large and most of the small provincial companies.

[5] Excludes fraternal insurance.

[6] Includes annuity contracts for 1957 and subsequent years.

APPENDIX

This Appendix brings up to the date of going to press (Aug. 31, 1961) certain information included in Chapter II, which was prepared as at Jan. 1, 1961.

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No change was made in the membership of the Federal Cabinet.

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No Senators were appointed during the period but three vacancies occurred through the deaths of Hon. Ray Petten, Newfoundland; Hon. Felix Patrick Quinn, Nova Scotia; and Hon. William Daum Euler, Ontario.

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The following federal by-elections were held between Jan. 1 and Aug. 31, 1961:—

Electoral District	*Name of New Member*	*Political Affiliation*	*Date*
Leeds, Ont	John R. Matheson	Lib	May 29, 1961
Restigouche-Madawaska, N.B.	Edgar E. Fournier	P.C.	May 29, 1961
Kings, P.E.I.	Margaret Mary Macdonald	P.C.	May 29, 1961
Esquimalt-Saanich, B.C.	George Louis Chatterton	P.C.	May 29, 1961

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The following corrects an error in Table 28 showing the Fifteenth Ministry of Manitoba:—

Office	*Name*	*Date of First Appointment*	*Date of Present Appointment*
Premier and Acting Provincial Treasurer	Hon. Dufferin Roblin	June 30, 1958	June 30, 1958
Minister of Public Works	Hon. John W. M. Thompson	June 30, 1958	Dec. 17, 1959
Attorney General and Acting Minister of Municipal Affairs	Hon. Sterling R. Lyon	June 30, 1958	June 30, 1958
Minister of Education	Hon. Stewart E. McLean	June 30, 1958	Aug. 26, 1960 June 30, 1958
Provincial Secretary and Minister of Industry and Commerce	Hon. Edward Gurney V. Evans	June 30, 1958	Dec. 17, 1959 Aug. 7, 1959
Minister of Health and Public Welfare	Hon. George Johnson	June 30, 1958	June 30, 1958
Minister of Public Utilities and Minister of Labour	Hon. J. B. Carroll	June 30, 1958	June 30, 1958 Dec. 17, 1959
Minister of Mines and Natural Resources	Hon. Charles H. Witney	Aug. 7, 1959	Aug. 7, 1959
Minister of Agriculture and Conservation	Hon. George Hutton	Aug. 7, 1959	Aug. 7, 1959

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The following federal Royal Commissions were appointed between Jan. 1 and Aug. 31, 1961:—

Nature of Commission	*Chief Commissioner*	*Date Established*
To inquire into and report upon the existing facilities and the future need for health services for the people of Canada and the resources to provide such services.	Hon. EMMETT M. HALL	June 20, 1961
To inquire into and report upon the suitability of the scope, basic principles and provisions of the Unemployment Insurance Act and the regulations thereunder and the manner of operating thereunder.	ERNEST C. GILL	July 17, 1961

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